ATTACHMENT A

VALIDATED DATA

213564

REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected at the former Sylvania Electric Products Incorporated facility in Hicksville, New York. This report is concerned with metals in groundwater samples collected by Malcolm Pirnie, Inc. (MPI) from March 15, 2003 through February 19, 2004.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for analyses of metals using United States Environmental Protection Agency (USEPA) guidance methods. A total of 1,123 samples[1] were submitted, which resulted in 1,399 total metal results[2]. Of this number, 1,350 of them are results[3] of actual samples and the remainders are field quality assurance/quality control (QA/QC) indicators[4] of these samples. The analytical data generated for this investigation were evaluated by MPI using the QA/QC criteria established in the methods and USEPA guidelines. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.
- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* EPA 540-R-01-008. July 2002.
- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.

In circumstances where the quality of the data or the accuracy of the results is suspect, the project's Quality Assurance Project Plan (QAPP) and professional judgment[5] were also used to determine if results should be qualified as estimated ("J" or "UJ"). Since the individual guidance documents used (as a source of reference for the validation) differ somewhat in the type of qualification applied to data, MPI applied qualifiers generally with an err to caution (conservative). All instrument calibration analyses, laboratory control sample analyses, serial dilution analyses, and interference check sample analyses were acceptable.

There were some laboratory initial calibration blanks, continuing calibration blanks, and method blanks, which contained low concentrations of the target analytes. The presence of these analytes in specific blanks affected many project samples. Qualification of associated results was performed to show the relationship between the laboratory contamination and the uncertainty of the actual project sample results.

Matrix spike samples were not performed for all sample batches. In many instances, the matrix spikes were performed on field blank samples, which offered no information on the possible problems associated with the matrix of the actual samples. In many other instances, the matrix spikes were performed on samples, which were not associated with this project.

[1] Each sample may have been analyzed for more than one metal and may have included total recoverable and dissolved fractions.
[2] This is the number of results reported by the laboratory on their Sample Results reporting form (Form 1).
[3] This is the total number of well data points, which may include more than one metal and may include recoverable and dissolved fractions including duplicate sample results.
[4] These indicators do not include Matrix Spike/Matrix Spike Duplicate or other internal laboratory QA/QC indicators.
[5] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

The relative percent differences (RPD) between field duplicate pair results were assessed. Eight (8) of the RPDs were significant enough to qualify some of the data. Ninety-five (95) duplicate pairs were collected. This is equivalent to a field duplicate sample collection rate of 7.6 percent[6]. Based on the QAPP, the rate should have been 10 percent. With 1,255 discrete field sample data[7], 126 field duplicate data should have been collected. Therefore, evaluation of precision has not been adequate.

None of the exceedances of method non-conformances were significant enough to jeopardize the usability of the data with the exception of four hexavalent chromium samples, which exceeded their short holding time criteria. With the exception of the four results, all analytical results are usable based on the findings listed in this Data Usability Summary Report (DUSR).

Overall, 99.7 percent[8] of the metals data were determined to be usable for qualitative and quantitative purposes. Four hexavalent chromium results were qualified as unusable, "R." Sample results, which were qualified as estimated, "J" and "UJ," due to quality control (QC) exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the QAPP, has been met for the metals in groundwater database.

[6] Value = (95 duplicate data / 1,255 discrete sample data) X 100.
[7] This number represents 1,350 (non-field blank/equipment blank) total data points minus 95 duplicate sample data points.
[8] Value = ((1,399 all data points – 4 unusable data points) / 1,399 all data points) X 100.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples collected at the former Sylvania Electric Products Incorporated facility in Hicksville, New York (the Site). This report pertains to metals samples collected by Malcolm Pirnie, Inc. (MPI) from March 15, 2003 through February 19, 2004.

The sample delivery group (SDG) number (laboratory package identification number), field identification, and laboratory identification of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3C190235	MW-7	F3C190235003	Be, Cr, Cu, Ni, and Tl
	MW-2	F3C190235004	Be, Cr, Cu, Ni, and Tl
	MW-1	F3C190235005	Be, Cr, Cu, Ni, and Tl
	MW-11	F3C190235006	Be, Cr, Cu, Ni, and Tl
	MW-12	F3C190235007	Be, Cr, Cu, Ni, and Tl
	MW-5	F3C190235008	Be, Cr, Cu, Ni, and Tl
	MW-10 (also MS/MD)	F3C190235009	Be, Cr, Cu, Ni, and Tl
	MW-9	F3C190235010	Be, Cr, Cu, Ni, and Tl
	MW-6	F3C190235011	Be, Cr, Cu, Ni, and Tl
	MW-3	F3C190235012	Be, Cr, Cu, Ni, and Tl
	MW-4	F3C190235013	Be, Cr, Cu, Ni, and Tl
	MW-8	F3C190235014	Be, Cr, Cu, Ni, and Tl
	FB	F3C190235015	Be, Cr, Cu, Ni, and Tl
	MW-DUP (MW-3)	F3C190235016	Be, Cr, Cu, Ni, and Tl
F3D290160	P-17-82.25 (also MS/MSD)	F3D290160002	Ni Total
	P-17-102.27	F3D290160004	Ni N/A
	P-F-86.48	F3D290160007	Ni Dissolved
F3E020153	P-F-96.48 (also MS/MSD)	F3E020153001	Ni Dissolved
	P-F-106.46	F3E020153002	Ni Dissolved
	P-F-116.49	F3E020153003	Ni Dissolved
F3E090278	P27-79.75 (also MS/MSD)	F3E090278001	Ni Total
	P-27-89.75	F3E090278002	Ni Total
	P-27-99.75	F3E090278003	Ni Total
	P-27-109.75	F3E090278004	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3E090278 Cont'd	P-27-119.75	F3E090278005	Ni Total
	P-27-DUP (P-27-99-75)	F3E090278006	Ni Total
	P-27-129.75	F3E090278007	Ni Dissolved
	P-27-139.75	F3E090278008	Ni Total
	P-27-149.75	F3E090278009	Ni Total
	P-27-159.75	F3E090278010	Ni Total
	P-27-169.75	F3E090278011	Ni Total
	P-27-179.75	F3E090278012	Ni Total
	P-27-189.75	F3E090278013	Ni Total
	P-27-199.75	F3E090278014	Ni Dissolved
	P-27-209.75	F3E090278015	Ni Total
	P-27-219.50	F3E090278016	Ni Dissolved
	P-27-229.50	F3E090278017	Ni Total
	P-27-239.50	F3E090278018	Ni Total
	P-27-267.02	F3E090278019	Ni Total
	P-27-277.02	F3E090278020	Ni Dissolved
	P-28-77.90	F3E090278021	Ni Total
	P-28-87.02	F3E090278022	Ni Dissolved
	P-28-97.02	F3E090278023	Ni Dissolved
	P-28-107.02	F3E090278024	Ni Dissolved
	P-28-117.02	F3E090278025	Ni Total
	P-28-127.02	F3E090278026	Ni Dissolved
	P-28-137.02	F3E090278027	Ni Dissolved
	P-28-147.02	F3E090278028	Ni Dissolved
	P-28-160.02	F3E090278029	Ni Dissolved
	P-28-167.02	F3E090278030	Ni Dissolved
	P-28-177.02	F3E090278031	Ni Dissolved
	P-28-187.02	F3E090278032	Ni Dissolved
	P-28-197.02	F3E090278033	Ni Total
	P-28-207.02	F3E090278034	Ni Total
	P-28-217.02	F3E090278035	Ni Dissolved
	P-28-227.02	F3E090278036	Ni Dissolved
	P-28-237.02	F3E090278037	Ni Dissolved
	P-28-247.02 (also MS/MSD)	F3E090278038	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3E140308	P-26-76.86	F3E140308001	Ni Dissolved
	P-26-86.8	F3E140308002	Ni Dissolved
	P-26-96.8	F3E140308003	Ni Dissolved
	P-26-106.8	F3E140308004	Ni Dissolved
	P-26-116.8	F3E140308005	Ni Dissolved
	P-26-126.8	F3E140308006	Ni Dissolved
	P-26-136.8	F3E140308007	Ni Dissolved
	P-26-146.8 (also MS/MSD)	F3E140308008	Ni Dissolved
F3E160130	P-26-152.25	F3E160130001	Ni Dissolved
	P-26-162.25	F3E160130002	Ni Dissolved
	P-26-172.25	F3E160130003	Ni Dissolved
	P-26-182.25	F3E160130004	Ni Dissolved
	P-26-192.25	F3E160130005	Ni Dissolved
	P-26-202.25	F3E160130006	Ni Dissolved
	P-26-211.25	F3E160130007	Ni Dissolved
	P-26-221.25	F3E160130008	Ni Dissolved
	P-26-231.25	F3E160130009	Ni Dissolved
	P-26-241.25	F3E160130010	Ni Dissolved
	P-E-78.57	F3E160130011	Ni Total
	P-E-88.57	F3E160130012	Ni Total
F3E200165	P-26-257.2	F3E200165001	Ni Dissolved
	P-26A-276.53	F3E200165003	Ni Dissolved
	P-26A-286.5	F3E200165004	Ni Dissolved
	P-E-98.57	F3E200165007	Ni Dissolved
	P-E-108.57	F3E200165008	Ni Total
	P-E-118.57	F3E200165009	Ni Total
	P-E-128.57	F3E200165010	Ni Dissolved
	P-E-138.57	F3E200165011	Ni Dissolved
	P-E-148.57	F3E200165012	Ni Dissolved
	P-E-158.57	F3E200165013	Ni Dissolved
	P-E-168.57	F3E200165014	Ni Total
	P-E-178.57	F3E200165015	Ni Total
	P-E-198.57	F3E200165016	Ni Total
	P-E-208.57	F3E200165017	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3E200165 Cont'd	P-E-218.57	F3E200165018	Ni Dissolved
	P-E-228.57	F3E200165019	Ni Dissolved
	P-E-238.57	F3E200165020	Ni Dissolved
F3E230179	P-26A-295.85	F3E230179001	Ni Dissolved
	P-E-268.57	F3E230179002	Ni Dissolved
	P-E-292.28	F3E230179003	Ni Total
	P-E-301.23	F3E230179004	Ni Dissolved
	P-E-317.15	F3E230179005	Ni Dissolved
	P-E-332.85	F3E230179006	Ni Dissolved
	P-E-327.15	F3E230179007	Ni Dissolved
F3E290170	P-D-77.05	F3E290170001	Ni Dissolved
	P-D-87.05	F3E290170002	Ni Total
	1EB-5/27	F3E290170003	Ni Total
	P-D-97.05	F3E290170004	Ni Dissolved
	P-D-107.05 (also MS/MSD)	F3E290170005	Ni Dissolved
	P-D-127.05	F3E290170006	Ni Total
	P-D-117.05	F3E290170007	Ni Total
	P-D-137.05	F3E290170008	Ni Dissolved
	P-D-147.05	F3E290170009	Ni Dissolved
	P-15-79.65	F3E290170011	Ni Dissolved
	P-15-89.65	F3E290170012	Ni Total
	P-15-99.65	F3E290170013	Ni Total
	P-15-109.65	F3E290170014	Ni Total
	P-15-119.65	F3E290170015	Ni Total
F3F030298	P-15-129.65	F3F030298001	Ni Total
	P-15-139.65	F3F030298002	Ni Total
	P-15-149.65	F3F030298003	Ni Total
	P-15-159.65	F3F030298004	Ni Total
	P-15-169.65	F3F030298005	Ni Total
	P-15-179.65	F3F030298006	Ni Total
	P-15-189.65	F3F030298007	Ni Total
	P-15-199.65	F3F030298008	Ni Total
	P-15-208.00	F3F030298009	Ni Dissolved
	P-15-218.00	F3F030298010	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3F030298 Cont'd	P-15-DUP (P-15-218.00)	F3F030298011	Ni Total
	P-15-240.00	F3F030298012	Ni Dissolved
	P-15-290.05	F3F030298013	Ni Dissolved
	P-15-300.05	F3F030298014	Ni Dissolved
	P-15-310.05	F3F030298015	Ni Total
	P-15-329.10	F3F030298016	Ni Total
	P-15-339.10	F3F030298017	Ni Dissolved
	P-D-217.1	F3F030298018	Ni Dissolved
	P-D-227.1 (also MS/MSD)	F3F030298017	Ni Dissolved
	P-D-237.1	F3F030298020	Ni Dissolved
	P-D-247.05 (also MS/MSD)	F3F030298021	Ni Dissolved
	P-D-257.	F3F030298022	Ni Dissolved
	P-D-290.1	F3F030298023	Ni Dissolved
	P-D-157.05	F3F030298029	Ni Dissolved
	P-D-167.1	F3F030298030	Ni Dissolved
	P-D-177.1	F3F030298031	Ni Total
	P-D-DUP (P-D-217.1)	F3F030298032	Ni Dissolved
	P-D-187.1	F3F030298033	Ni Dissolved
	P-D-197.1	F3F030298034	Ni Dissolved
	P-D-207.1	F3F030298035	Ni Dissolved
	P-15-228.00	F3F030298036	Ni Dissolved
F3F050171	P-D-DUP#2 (P-D-321.95)	F3F050171001	Ni Dissolved
	P-D-321.95	F3F050171002	Ni Dissolved
	P-D-331.95	F3F050171003	Ni Dissolved
	P-D-341.95	F3F050171004	Ni Total
	P-D-351.95	F3F050171005	Ni Dissolved
F3F120220	P-C-79.60 (also MS/MSD)	F3F120220001	Ni Total
	P-C-89.6	F3F120220002	Ni Total
	P-C-99.6	F3F120220003	Ni Dissolved
	P-C-109.6	F3F120220004	Ni Dissolved
	P-C-119.6	F3F120220005	Ni Total
	P-C-129.6	F3F120220006	Ni Dissolved
	P-C-139.6	F3F120220007	Ni Dissolved
	P-C-149.6	F3F120220008	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3F120220 Cont'd	P-C-159.6	F3F120220009	Ni Total
	P-C-169.6	F3F120220010	Ni Dissolved
	P-C-179.6	F3F120220011	Ni Total
	P-C-DUP #1 (P-C-99.6)	F3F120220012	Ni Dissolved
F3F170126	P-C-275.3 (also MS/MSD)	F3F170126001	Ni Dissolved
	P-C-DUP-2 (P-C-320.3)	F3F170126002	Ni Dissolved
	P-C-320.3	F3F170126003	Ni Dissolved
	P-C-330.3	F3F170126004	Ni Dissolved
	P-C-337.5	F3F170126005	Ni Dissolved
	P-24-87.35	F3F170126006	Ni Dissolved
	P-24-77.35	F3F170126007	Ni Dissolved
	P-C-FB	F3F170126009	Ni
	P-C-185.3	F3F170126012	Ni Total
	P-C-195.3	F3F170126013	Ni Total
	P-C-205.3	F3F170126014	Ni Dissolved
	P-C-215.3	F3F170126015	Ni Dissolved
	P-C-225.3	F3F170126016	Ni Total
	P-C-235.3	F3F170126017	Ni Total
	P-C-245.3	F3F170126018	Ni Total
	P-C-265.3	F3F170126019	Ni Total
F3F180192	P-24-97.35 (also MS/MSD)	F3F180192002	Ni Dissolved
	P-24-107.35	F3F180192003	Ni Dissolved
	P-24-115.35	F3F180192004	Ni Dissolved
	P-24-127.3	F3F180192005	Ni Total
	P-24-137.3	F3F180192006	Ni Dissolved
	P-24-147.3	F3F180192007	Ni Total
	P-C-347.7	F3F180192008	Ni Total
F3F200145	P-24-157.3 (also MS/MSD)	F3F200145001	Ni Total
	P-24-167.3	F3F200145002	Ni Total
	P-24-177.3	F3F200145003	Ni Dissolved
	P-24-187.3	F3F200145004	Ni Total
	P-24-197.3	F3F200145005	Ni Total
	P-24-207.3	F3F200145006	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3F200145 Cont'd	P-24-217.3	F3F200145007	Ni Total
	P-24-DUP#1 (P-24-167.3)	F3F200145008	Ni Dissolved
	P-24-227.3	F3F200145009	Ni Total
	P-24-237.3	F3F200145010	Ni Total
	P-24-247.3	F3F200145011	Ni Total
	P-24-257.3	F3F200145012	Ni Total
	P-24-267.3	F3F200145015	Ni Dissolved
	P-24-277.3	F3F200145016	Ni Dissolved
	P-24-287.3	F3F200145017	Ni Dissolved
	P-24-DUP#2 (P-24-287.3)	F3F200145018	Ni Dissolved
	P-C-364.5	F3F200145019	Ni Dissolved
	P-C-374.5	F3F200145020	Ni Total
	P-C-394.5	F3F200145021	Ni Total
	P-C-384.5	F3F200145022	Ni Dissolved
F3F260187	P-24-297.3	F3F260187001	Ni Dissolved
	P-23-FB1 (also MS/MSD)	F3F260187002	Ni Total
	P-23-80.1	F3F260187003	Ni Total
	P-23-90.1	F3F260187004	Ni Dissolved
	P-23-100.1	F3F260187005	Ni Total
	P-23-110.1	F3F260187006	Ni Total
	P-23-120.1	F3F260187007	Ni Total
	P-23-130.1	F3F260187008	Ni Dissolved
	P-23-140.1	F3F260187009	Ni Dissolved
	P-23-150.1	F3F260187010	Ni Dissolved
	P-23-160.1	F3F260187011	Ni Dissolved
	P-23-170.1	F3F260187012	Ni Dissolved
	P-23-180.1	F3F260187013	Ni Dissolved
	P-23-DUP-1 (P-23-180.1)	F3F260187014	Ni Dissolved
F3F270132	P-23-190.1	F3F270132002	Ni Dissolved
	P-23-200.1	F3F270132003	Ni Dissolved
	P-23-210.1	F3F270132004	Ni Dissolved
	P-23-220.1	F3F270132005	Ni Total
	P-23-227.65	F3F270132006	Ni Dissolved
F3G010309	P-23-239.8	F3G010309001	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	**Sample ID**	**Laboratory ID**	**Analysis Performed**
F3G010309 Cont'd	P-23-252.0	F3G010309002	Ni Dissolved
	P-23-262.0	F3G010309003	Ni Total
	P-23A-286.96	F3G010309004	Ni Dissolved
	P-23A-293.50	F3G010309005	Ni Dissolved
F3G030162	P-23A-334.1	F3G030162002	Ni Dissolved
	P-23A-343.4	F3G030162003	Ni Dissolved
	P-23A-DUP.1 (P-23A-347.6)	F3G030162004	Ni Total
	P-23A-347.6	F3G030162005	Ni Total
	P-23A-EB-2	F3G030162006	Ni
F3G110256	P-25-EB-1	F3G110256001	Ni
	P-25-79.7	F3G110256002	Ni Total
	P-25-89.7	F3G110256003	Ni Total
	P-25-99.1	F3G110256004	Ni Total
	P-25-109.7	F3G110256005	Ni Total
	P-25-119.7 (also MS/MSD)	F3G110256006	Ni Total
	P-25-129.7	F3G110256007	Ni Total
	P-25-139.7	F3G110256008	Ni Total
	P-25-149.7	F3G110256009	Ni Total
	P-25-159.7	F3G110256010	Ni Dissolved
	P-25-169.7	F3G110256011	Ni Dissolved
	P-25-179.7	F3G110256012	Ni Total
	P-25-189.7	F3G110256013	Ni Total
	P-25-199.7	F3G110256014	Ni Dissolved
	P-25-209.7	F3G110256015	Ni Dissolved
	P-25-219.7	F3G110256016	Ni Dissolved
	P-25-DUP-1 (P-25-179.7)	F3G110256017	Ni Total
	P-35-EB-1	F3G110256018	Ni
	P-35-77.2	F3G110256019	Ni Total
	P-35-87.2	F3G110256020	Ni Total
	P-35-97.2 (also MS/MSD)	F3G110256021	Ni Total
	P-35-107.2	F3G110256022	Ni Total
	P-35-117.2	F3G110256023	Ni Total
	P-35-127.2	F3G110256024	Ni Total
	P-35-137.2	F3G110256025	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3G110256 Cont'd	P-35-147.2	F3G110256026	Ni Total
	P-35-157.2	F3G110256027	Ni Total
	P-35-167.2	F3G110256028	Ni Total
	P-35-177.2	F3G110256029	Ni Total
	P-35-DUP-1 (P-35-177.2)	F3G110256030	Ni Total
F3G150156	P-25-229.5	F3G150156001	Ni Total
	P-25-239.5	F3G150156002	Ni Dissolved
	P-25-249.5 (also MS/MSD)	F3G150156003	Ni Dissolved
	P-25-259.5	F3G150156004	Ni Dissolved
	P-25-269.5	F3G150156005	Ni Total
	P-25-275.8	F3G150156006	Ni Total
	P-25-DUP-2 (P-25-275.8)	F3G150156007	Ni Total
	P-25-290.0	F3G150156008	Ni Total
	P-25-300.0	F3G150156009	Ni Total
	P-25-310.0	F3G150156010	Ni Total
	P-25-320.0	F3G150156011	Ni Dissolved
	P-25-330.0	F3G150156012	Ni Dissolved
	P-25-340.0	F3G150156013	Ni Total
	P-25-349.4	F3G150156014	Ni Total
	P-25-370.0	F3G150156015	Ni Total
	P-25-379.2	F3G150156016	Ni Total
	P-35-187.2	F3G150156017	Ni Dissolved
	P-35-197.2	F3G150156018	Ni Dissolved
	P-35-207.2	F3G150156019	Ni Total
	P-35-217.2	F3G150156020	Ni Dissolved
	P-35-227.2	F3G150156021	Ni Dissolved
	P-35-237.2	F3G150156022	Ni Total
	P-35-247.2 (also MS/MSD)	F3G150156023	Ni Dissolved
	P-35-257.2	F3G150156024	Ni Dissolved
	P-35-267.2	F3G150156025	Ni Total
	P-35-277.2	F3G150156026	Ni Dissolved
	P-35-EB-2	F3G150156027	Ni Total
	P-35-292.2	F3G150156028	Ni Dissolved
	P-35-322.2	F3G150156029	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3G150156 Cont'd	P-35-332.2	F3G150156030	Ni Dissolved
	P-35-DUP-2 (P-35-332.2)	F3G150156031	Ni Dissolved
	P-35-342.2	F3G150156033	Ni Dissolved
	P-35-347.2	F3G150156034	Ni Dissolved
F3G230216	P-H-EB1	F3G230216001	Ni
	P-H-76.8	F3G230216002	Ni Dissolved
	P-H-86.8	F3G230216003	Ni Dissolved
	P-H-96.8	F3G230216004	Ni Total
	P-H-106.8	F3G230216005	Ni Dissolved
	P-H-116.8	F3G230216006	Ni Dissolved
	P-42-EB1	F3G230216008	Ni
F3G250374	P-H-126.8 (also MS/MSD)	F3G250374002	Ni Dissolved
	P-H-DUP1 (P-H-126.8)	F3G250374003	Ni Dissolved
	P-H-136.8	F3G250374004	Ni Dissolved
	P-H-146.8	F3G250374005	Ni Dissolved
	P-H-156.8	F3G250374006	Ni Dissolved
	P-H-166.8	F3G250374007	Ni Dissolved
	P-H-176.8	F3G250374008	Ni Dissolved
	P-H-186.8	F3G250374009	Ni Dissolved
	P-H-196.8	F3G250374010	Ni Dissolved
	P-H-EB2	F3G250374011	Ni
	P-H-206.55	F3G250374012	Ni Total
	P-42-179.6	F3G250374013	Ni Total
	P-42-189.6	F3G250374014	Ni Total
	P-42-197.7	F3G250374015	Ni Total
	P-42-202.7	F3G250374016	Ni Total
	P-42-DUP-1 (P-42-202.7)	F3G250374017	Ni Total
	P-H-DUP2 (P-H-206.55)	F3G250374019	Ni Total
	P-42-79.6	F3G250374021	Ni Total
	P-42-89.6	F3G250374022	Ni Total
	P-42-99.6	F3G250374023	Ni Total
	P-42-109.6 (also MS/MSD)	F3G250374024	Ni Total
	P-42-119.6	F3G250374025	Ni Total

Table 1-1: Sample Cross-Reference List			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3G250374 Cont'd	P-42-129.6	F3G250374026	Ni Total
	P-42-139.6	F3G250374027	Ni Total
	P-42-149.6	F3G250374028	Ni Dissolved
	P-42-159.6	F3G250374029	Ni Dissolved
	P-42-169.4	F3G250374030	Ni Total
F3G290207	P-H-216.55	F3G290207001	Ni Total
	P-H-226.55	F3G290207002	Ni Total
	P-H-236.55	F3G290207003	Ni Total
	P-H-328.55	F3G290207004	Ni Total
	P-H-334.97	F3G290207005	Ni Total
	P-H-351.65	F3G290207006	Ni Dissolved
	P-H-376.85	F3G290207007	Ni Dissolved
	P-H-386.5	F3G290207008	Ni Dissolved
	P-H-396.5	F3G290207009	Ni Total
	P-42-EB-2	F3G290207010	Ni
	P-42-217.2	F3G290207011	Ni Total
	P-42-224.6	F3G290207012	Ni Total
	P-42-234.6 (also MS/MSD)	F3G290207013	Ni Dissolved
	P-42-276.4	F3G290207014	Ni Dissolved
	P-42-287.9	F3G290207015	Ni Dissolved
	P-42-298.0	F3G290207016	Ni Total
	P-42-308.6	F3G290207017	Ni Total
	P-42-319.8	F3G290207018	Ni Dissolved
	P-42-329.8	F3G290207019	Ni Total
	P-42-DUP-2 (P-42-329.8)	F3G290207020	Ni Total
	P-42-339.8	F3G290207021	Ni Total
	P-42-354.6	F3G290207022	Ni Total
F3H010243	P-42-389.50	F3H010243001	Ni Dissolved
	P-42-410.07	F3H010243002	Ni Total
	P-42-424.45	F3H010243003	Ni Total
F3H060192	P-20-79.60	F3H060192001	Ni Total
	P-20-89.60	F3H060192002	Ni Total
	P-20-99.60	F3H060192003	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3H060192 Cont'd	P-20-109.60	F3H060192004	Ni Total
	P-20-119.60	F3H060192005	Ni Total
	P-20-129.60	F3H060192006	Ni Dissolved
	P-20-139.60	F3H060192007	Ni Dissolved
	P-20-149.60	F3H060192008	Ni Total
	P-20-159.60	F3H060192009	Ni Total
	P-45-81.25	F3H060192011	Ni Total
	P-45-91.25	F3H060192012	Ni Dissolved
	P-45-101.25	F3H060192014	Ni Total
	P-45-111.25	F3H060192015	Ni Total
	P-45-121.25	F3H060192016	Ni Total
	P-45-131.25	F3H060192017	Ni Dissolved
	P-45-DUP1 (P-45-81.25)	F3H060192018	Ni Total
	P-45-71.25	F3H060192019	Ni Total
F3H080219	P-20-169.60	F3H080219001	Ni Total
	P-20-179.60 (also MS/MSD)	F3H080219002	Ni Total
	P-20-189.60	F3H080219003	Ni Dissolved
	P-20-DUP1 (P-20-169.60)	F3H080219004	Ni Total
	P-20-209.70	F3H080219005	Ni Dissolved
	P-20-220.76	F3H080219006	Ni Total
	P-20-229.70	F3H080219007	Ni Dissolved
	P-20-269.55	F3H080219009	Ni Dissolved
	P-45-151.25	F3H080219010	Ni Dissolved
	P-45-167.25	F3H080219011	Ni Dissolved
	P-45-177.25	F3H080219012	Ni Total
	P-45-187.25	F3H080219013	Ni Total
	P-45-197.25	F3H080219014	Ni Dissolved
	P-45-207.25	F3H080219015	Ni Dissolved
	P-45-217.25	F3H080219016	Ni Dissolved
	P-45-227.25	F3H080219017	Ni Total
	P-45-237.25	F3H080219018	Ni Dissolved
F3H130195	P-45-281.65	F3H130195001	Ni Dissolved
	P-45-291.65	F3H130195002	Ni Total
	P-45-301.25	F3H130195003	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3H130196 Cont'd	P-45-311.65	F3H130195004	Ni Dissolved
	P-45-321.65	F3H130195005	Ni Total
	P-45-340.11	F3H130195006	Ni Dissolved
	P-45-351.75	F3H130195007	Ni Total
	P-20-281.94	F3H130195008	Ni Dissolved
	P-20-289.55	F3H130195009	Ni Total
	P-20-309.60 (also MS/MSD)	F3H130195010	Ni Dissolved
	P-20-319.60	F3H130195011	Ni Total
	P-20-328.19	F3H130195012	Ni Total
	P-20-339.60	F3H130195013	Ni Total
	P-20-349.60	F3H130195014	Ni Total
	P-20-359.60	F3H130195015	Ni Dissolved
	P-20-379.60	F3H130195016	Ni Dissolved
	P-20-392.0	F3H130195017	Ni Dissolved
	P-20-369.60	F3H130195018	Ni Dissolved
	P-20-FB	F3H130195019	Ni
	P-20-427.99	F3H130195021	Ni Dissolved
	P-20-DUP-2 (P-20-427.99)	F3H130195022	Ni Dissolved
F3H180106	P-45-366.39	F3H180106001	Ni Dissolved
	P-45-DUP 2 (P-45-366.39)	F3H180106002	Ni Dissolved
	P-20-462.87	F3H180106003	Ni Dissolved
	P-20-469.15	F3H180106004	Ni Dissolved
	P-20-476.68	F3H180106005	Ni Total
F3H210288	P-36-EB1	F3H210288001	Ni
	P-36-76.7	F3H210288002	Ni Dissolved
	P-36-86.7	F3H210288003	Ni Dissolved
	P-36-96.7	F3H210288004	Ni Dissolved
	P-36-106.7	F3H210288005	Ni Dissolved
	P-36-116.7	F3H210288006	Ni Dissolved
	P-36-126.7	F3H210288007	Ni Dissolved
	P-36-136.7	F3H210288008	Ni Dissolved
	P-46-79.60 (also MS/MSD)	F3H210288009	Ni Dissolved
	P-46-89.60	F3H210288010	Ni Total
	P-46-99.60	F3H210288011	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3H210288 Cont'd	P-46-109.60	F3H210288012	Ni Dissolved
	P-46-119.60	F3H210288013	Ni Total
	P-46-129.60	F3H210288014	Ni Dissolved
	P-37-79.3	F3H210288015	Ni Total
	P-37-89.95	F3H210288016	Ni Dissolved
	P-37-99.95	F3H210288017	Ni Dissolved
	P-37-109.95	F3H210288018	Ni Dissolved
	P-37-119.95	F3H210288019	Ni Dissolved
	P-37-129.95	F3H210288020	Ni Total
	P-37-139.95	F3H210288021	Ni Dissolved
	P-37-149.95	F3H210288022	Ni Total
	P-37-DUP 1 (P-37-119.95)	F3H210288023	Ni Dissolved
F3H220246	P-36-146.7	F3H220246001	Ni Dissolved
	P-36-156.7	F3H220246002	Ni Dissolved
	P-36-DUP-1 (P-36-15.7)	F3H220246003	Ni Dissolved
	P-36-166.7	F3H220246004	Ni Dissolved
	P-36-176.7	F3H220246005	Ni Dissolved
	P-36-186.7	F3H220246006	Ni Dissolved
	P-36-196.7	F3H220246007	Ni Dissolved
	P-36-206.7	F3H220246008	Ni Dissolved
	P-36-216.7	F3H220246009	Ni Dissolved
	P-36-226.7	F3H220246010	Ni Dissolved
	P-46-139.6	F3H220246011	Ni Total
	P-46-DUP-1 (P-46-139.60)	F3H220246012	Ni Total
	P-46-149.60	F3H220246013	Ni Dissolved
	P-46-159.60	F3H220246014	Ni Dissolved
	P-46-169.60 (also MS/MSD)	F3H220246015	Ni Dissolved
	P-46-179.60	F3H220246016	Ni Dissolved
	P-46-189.60	F3H220246017	Ni Total
	P-46-199.60	F3H220246018	Ni Dissolved
	P-37-159.95	F3H220246019	Ni Total
	P-37-169.95	F3H220246020	Ni Dissolved
	P-37-179.95	F3H220246021	Ni Dissolved
	P-37-189.95	F3H220246022	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3E090278 Cont'd	P-37-EB-1 (also MS/MSD)	F3H220246023	Ni
F3H220246	P-46-209.60 (also MS/MSD)	F3H270230001	Ni Dissolved
	P-46-215.15	F3H270230002	Ni Total
	P-46-275.42	F3H270230003	Ni Dissolved
	P-46-DUP-2 (P-46-275.42)	F3H270230004	Ni Dissolved
	P-46-284.32	F3H270230005	Ni Total
	P-46-291.69	F3H270230006	Ni Dissolved
	P-46-298.35	F3H270230007	Ni Total
	P-46-307.69	F3H270230008	Ni Dissolved
	P-36A-266.8	F3H270230009	Ni Total
	P-36A-282.0	F3H270230010	Ni Total
	P-36A-292.4	F3H270230011	Ni Total
	P-36-236.7	F3H270230012	Ni Dissolved
	P-36A-371.75	F3H270230013	Ni Dissolved
	P-36A-328.4	F3H270230014	Ni Dissolved
	P-36A-EB2 (also MS/MSD)	F3H270230015	Ni
	P-37-224.75	F3H270230017	Ni Dissolved
	P-37-264.85	F3H270230018	Ni Total
	P-37-274.85	F3H270230019	Ni Total
	P-37-284.4	F3H270230020	Ni Total
	P-37-304.8	F3H270230021	Ni Dissolved
	P-37-DUPL#2 (P-37-304.8)	F3H270230022	Ni Dissolved
	P-37-314.8	F3H270230023	Ni Total
F3H280315	P-37A-324.8	F3H280315001	Ni Dissolved
	P-27A-333.2	F3H280315002	Ni Total
	P-37A-356.15	F3H280315003	Ni Dissolved
	P-37A-385.0	F3H280315004	Ni Total
	P-37A-394.5	F3H280315005	Ni Total
	P-36A-475.2	F3H280315006	Ni Total
	P-46-318.42	F3H280315007	Ni Dissolved
	P-46-330.21	F3H280315008	Ni, Cr Dissolved
	P-46-340.21	F3H280315009	Ni Total
	P-46-348.32	F3H280315010	Ni Dissolved
	P-46-360.21	F3H280315011	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3H280315 Cont'd	P-46-307.69 (also MS/MSD)	F3H280315012	Cr Dissolved
F3I040177	P-44-89.8 (also MS/MSD for Ni and Cr)	F3I040177003	Ni Dissolved
	P-44-99.3	F3I040177004	Ni Dissolved
	P-44-DUP 1 (P-44-99.3)	F3I040177005	Ni Dissolved
	P-44-109.8	F3I040177006	Ni Dissolved
	P-46-389.28 (also MS for Cr+6)	F3I040177007	Ni, Cr, Cr+6 Total
	P-44-121.55	F3I040177008	Ni Dissolved
	P-44-79.3	F3I040177010	Ni Dissolved
F3I050189	P-44-131.1	F3I050189001	Ni Dissolved
	P-44-139.8	F3I050189002	Ni Dissolved
	P-44-149.8	F3I050189003	Ni Dissolved
	P-44-159.8	F3I050189004	Ni Dissolved
	P-44-169.8	F3I050189005	Ni Dissolved
	P-44-179.8	F3I050189006	Ni Dissolved
	P-44-189.8	F3I050189007	Ni Dissolved
	P-44-199.8	F3I050189008	Ni Dissolved
	P-47-77.1	F3I050189009	Ni Total
	P-47-87.08	F3I050189010	Ni Total
	P-46-399.30	F3I050189011	Ni Dissolved
	P-46-409.34	F3I050189012	Ni Total
	P-46-DUP-3 (P-46-409.34)	F3I050189013	Ni Total
	P-46-419.27	F3I050189014	Ni Dissolved
	P-46-429.95	F3I050189015	Ni Dissolved
F3I090305	P-46-438.47	F3I090305001	Ni Dissolved
	P-46-470.25	F3I090305002	Ni Dissolved
	P-46-480.25	F3I090305003	Ni Dissolved
	P-46-490.25	F3I090305004	Ni Dissolved
	P-46-498.12 (also MS/MSD)	F3I090305005	Ni Dissolved
	P-44-DUP-2 (P-44-239.85)	F3I090305006	Ni Dissolved
	P-44-215.5	F3I090305007	Ni Total
	P-44-229.2	F3I090305008	Ni Total
	P-44-239.85	F3I090305009	Ni Dissolved
	P-44-249.85	F3I090305010	Ni Total
	P-44-257.1	F3I090305011	Ni Total

Table 1-1: *Sample Cross-Reference List*			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
Dissolved F3I090305 Cont'd	P-44-284.85	F3I090305012	Ni Total
	P-44-299.85	F3I090305013	Ni Total
	P-44-307.9	F3I090305014	Ni Dissolved
	P-44-EB-3	F3I090305015	Ni
	P-44-DUP-3 (P-44-339.8)	F3I090305016	Ni Dissolved
	P-44-339.8	F3I090305017	Ni Dissolved
	P-44-349.8	F3I090305018	Ni Dissolved
	P-44-356.1	F3I090305019	Ni Dissolved
	P-47-97.1	F3I090305020	Ni Total
	P-47-107.1	F3I090305021	Ni Total
	P-47-117.1	F3I090305022	Ni Total
	P-47-127.1	F3I090305023	Ni Total
	P-47-137.1	F3I090305024	Ni Dissolved
	P-47-147.1	F3I090305026	Ni Dissolved
	P-47-157.1	F3I090305027	Ni Dissolved
	P-47-DUP-2 (P-47-163.9)	F3I090305028	Ni Dissolved
	P-47-163.9	F3I090305029	Ni Dissolved
	P-47-177.0	F3I090305030	Ni Dissolved
	P-47-DUP-3 (P-47-187.0)	F3I090305031	Ni Dissolved
	P-47-187.0	F3I090305032	Ni Dissolved
	P-47-197.0	F3I090305033	Ni Dissolved
	P-47-205.7	F3I090305034	Ni Dissolved
	P-47-217.0	F3I090305035	Ni Dissolved
	P-47-227.0	F3I090305036	Ni Total
	P-47-247.0	F3I090305037	Ni Total
	P-47-272.0 (also MS/MSD)	F3I090305038	Ni Total
F3I120107	P-43-79.88	F3I120107002	Ni Total
	P-43-89.88	F3I120107003	Ni Total
	P-43-99.88	F3I120107004	Ni Dissolved
	P-43-109.88	F3I120107005	Ni Total
	P-43-119.88	F3I120107006	Ni Dissolved
	P-43-DUP-1 (P-43-119.88)	F3I120107007	Ni Dissolved
	P-43-129.88	F3I120107008	Ni Dissolved
	P-47-282.0 (also MS/MSD)	F3I120107009	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3I120107 Cont'd	P-47-308.5	F3I120107010	Ni Total
	P-47-DUP-4 (P-47-317.0)	F3I120107011	Ni Total
	P-47-317.0	F3I120107012	Ni Total
	P-47-327.7	F3I120107013	Ni Dissolved
	P-47-337.0	F3I120107014	Ni Dissolved
	P-47-344.1	F3I120107015	Ni Dissolved
F3I150101	P-47-368.4	F3I150101001	Ni Dissolved
	P-47-377.0	F3I150101002	Ni Dissolved
	P-47-387.0	F3I150101003	Ni Dissolved
	P-47-397.00	F3I150101007	Ni Total
F3I180259	P-29-79.5	F3I180259001	Ni Total
	P-29-89.5	F3I180259002	Ni Dissolved
	P-29-99.5	F3I180259003	Ni Dissolved
	P-29-109.5	F3I180259005	Ni Dissolved
	P-29-DUP-1 (P-29-109.5)	F3I180259006	Ni Dissolved
	P-29-119.5 (also MS/MSD)	F3I180259007	Ni Total
	P-29-129.5	F3I180259008	Ni Total
	P-29-139.5	F3I180259009	Ni Total
	P-29-149.5	F3I180259010	Ni Total
	P-29-159.5	F3I180259011	Ni Total
	P-43-139.88	F3I180259013	Ni Dissolved
	P-43-153.05	F3I180259014	Ni Dissolved
	P-43-161.65	F3I180259015	Ni Dissolved
	P-43-169.88	F3I180259016	Ni Dissolved
	P-43-179.88	F3I180259017	Ni Dissolved
	P-43-189.88	F3I180259018	Ni Dissolved
	P-43-199.88	F3I180259019	Ni Total
	P-38-76.7	F3I180259021	Ni Total
	P-38-86.7	F3I180259022	Ni Dissolved
	P-38-96.8	F3I180259025	Ni Dissolved
	P-38-106.7	F3I180259026	Ni Total
	P-38-116.7	F3I180259027	Ni Dissolved
	P-38-DUP-1 (P-38-116.7)	F3I180259028	Ni Dissolved
	P-38-126.7	F3I180259029	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3I180259 Cont'd	P-38-136.7	F3I180259030	Ni Dissolved
	P-38-146.7 (also MS/MSD)	F3I180259031	Ni Dissolved
	P-38-152.5	F3I180259032	Ni Total
F3I230231	P-29-169.35	F3I230231001	Ni Total
	P-29-176.7	F3I230231002	Ni Dissolved
	P-29-EB-1	F3I230231003	Ni
	P-29-191.33	F3I230231004	Ni Dissolved
	P-29-200.8	F3I230231005	Ni Total
	P-29-231.0	F3I230231006	Ni Total
	P-29-239.45	F3I230231007	Ni Dissolved
	P-29-249.85	F3I230231008	Ni Total
	P-29-259.5	F3I230231009	Ni Total
	P-29-268.4	F3I230231010	Ni Total
	P-29-278.4	F3I230231011	Ni Total
	P-29-289.85	F3I230231012	Ni Total
	P-29-299.85	F3I230231013	Ni Total
	P-29-310.2 (also MS/MSD)	F3I230231014	Ni, Cr, Cr+6 Total
	P-29-318.9	F3I230231015	Ni Total
	P-29-329.85	F3I230231016	Ni Total
	P-29-DUP-2 (P-29-329.85)	F3I230231017	Ni Total
	P-29-339.5	F3I230231018	Ni
	P-29-EB-2	F3I230231019	Ni
	P-29-360.0	F3I230231020	Ni, Cr, Cr+6 Total
	P-29-369.2 (also MS/MSD)	F3I230231021	Ni Total
	P-38-166.3	F3I230231022	Ni Total
	P-38-176.3	F3I230231023	Ni Total
	P-38-186.3	F3I230231024	Ni Total
	P-38-207.5	F3I230231025	Ni Total
	P-38-216.3	F3I230231026	Ni Dissolved
	P-38-226.3	F3I230231027	Ni Dissolved
	P-38-260.7	F3I230231028	Ni Dissolved
	P-38-312.9	F3I230231029	Ni Total
	P-38-322.9	F3I230231030	Ni Dissolved
	P-38-DUP-2 (P-38-322.9)	F3I230231031	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3I230231 Cont'd	P-38-332.3	F3I230231032	Ni NA
	P-38-341.1	F3I230231033	Ni Dissolved
	P-43-233.85	F3I230231034	Ni Total
	P-43-246.68	F3I230231035	Ni Dissolved
	P-43-DUP-2 (P-43-246.68)	F3I230231036	Ni Dissolved
	P-43-254.85	F3I230231037	Ni Dissolved
	P-43-264.85	F3I230231038	Ni Dissolved
	P-43-274.85	F3I230231039	Ni Dissolved
	P-43-284.85	F3I230231040	Ni Dissolved
	P-43-294.85	F3I230231041	Ni Total
	P-43-304.85	F3I230231042	Ni Dissolved
	P-29-390.0 (also MS/MSD)	F3I230231044	Ni, Cr, Cr+6 Total
F3I250196	P-38-370.1	F3I250196001	Ni Dissolved
	P-38-381.3	F3I250196002	Ni NA
	P-38-391.3	F3I250196003	Ni NA
	P-38-FB-2	F3I250196004	Ni
	P-38-DUP-3 (P-38-381.3)	F3I250196005	Ni NA
	P-29-410.7	F3I250196006	Ni Total
F3J030259	P-30-79.55	F3J030259001	Ni Dissolved
	P-30-89.50 (also MS/MSD)	F3J030259002	Ni Dissolved
	P-30-99.50	F3J030259003	Ni Dissolved
	P-30-119.50	F3J030259004	Ni Dissolved
	P-30-128.80	F3J030259005	Ni Dissolved
	P-30-139.50	F3J030259006	Ni Dissolved
	P-30-149.50	F3J030259007	Ni Dissolved
	P-30-186.25	F3J030259008	Ni Dissolved
	P-30-194.35	F3J030259009, 010	Ni Dissolved, Ni Total
	P-30-204.55	F3J030259011, 012	Ni Dissolved, Ni Total
	P-30-DUP-1 (P-30-204.55)	F3J030259013, 014	Ni Dissolved, Ni Total
F3J070236	P-30-214.55		Ni Dissolved, Ni Total
	P-30-224.55		Ni Dissolved
	P-30-232.85 (also MS/MSD)		Ni Dissolved
	P-30-244.5		Ni Dissolved
	P-30A-260.85		Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3J070236 Cont'd	P-30A-269.00		Ni Dissolved
	P-30A-279.00		Ni Dissolved, Ni Total
	P-30A-289.0		Ni Dissolved, Ni Total
	P-30A-298.6		Ni Dissolved, Ni Total
	P-30A-DUP-2 (P30A-298.6)		Ni Dissolved, Ni Total
	P-30A-307.45		Ni Dissolved, Ni Total
	P-30-EB-2		Ni Total
	P-18-EB-1		Ni Dissolved
	P-18-76.65		Ni Dissolved, Ni Total
	P-18-86.65		Ni Dissolved, Ni Total
	P-18-96.65		Ni Dissolved, Ni Total
	P-18-106.65 (Total – also MS/MSD)		Ni Dissolved, Ni Total
	P-18-116.65		Ni Dissolved
	P-18-126.65		Ni Dissolved, Ni Total
	P-18-136.65		Ni Dissolved, Ni Total
	P-18-146.65		Ni Dissolved
	P-18-156.65 (Dissolved – also MS/MSD)		Ni Dissolved, Ni Total
	P-18-DUP-1 (P-18-156.65)		Ni Dissolved, Ni Total
	P-18-166.65		Ni Dissolved
	P-18-176.65		Ni Dissolved
	P-18-186.65		Ni Dissolved, Ni Total
F3J110172	P-30A-331.0 (Dissolved – also MS/MSD)	F3J110172001, 018	Ni Dissolved, Ni Total
	P-30A-340.0	F3J110172035	Ni Dissolved
	P-30A-345.25 (Total – also MS/MSD)	F3J110172002, 019	Ni Dissolved, Ni Total
	P-30A-390.8	F3J110172036	Ni Dissolved
	P-30A-399.2	F3J110172037	Ni Dissolved
	P-30A-406.55	F3J110172003, 020	Ni Dissolved, Ni Total
	P-30A-DUP-3 (P-30A-406.55)	F3J110172004, 021	Ni Dissolved, Ni Total
	P-18-207.65	F3J110172005	Ni Dissolved
	P-18-217.65	F3J110172006	Ni Dissolved, Ni Total
	P-18-227.65	F3J110172007	Ni Dissolved
	P-18-237.65	F3J110172008	Ni Dissolved
	P-18-247.65	F3J110172009, 026	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3J110172 Cont'd	P-18-DUP-2 (P-18-247.65)	F3J110172010, 027	Ni Dissolved, Ni Total
	P-18-257.65	F3J110172011	Ni Dissolved
	P-18-267.65	F3J110172012	Ni Dissolved
	P-18-277.65	F3J110172013	Ni Dissolved
	P-18-287.65	F3J110172014, 031	Ni Dissolved, Ni Total
	P-18-302.66	F3J110172015, 032	Ni Dissolved, Ni Total
	P-18-328.31	F3J110172016	Ni Dissolved
	P-18-335.80	F3J110172017, 034	Ni Dissolved, Ni Total
F3J240204	P18-343.96	F3J240204001	Ni Dissolved
	P-18-350.25	F3J240204002	Ni Dissolved
	P-50-82.90	F3J240204003	Ni Dissolved
	P-50-89.90	F3J240204004	Ni Dissolved
	P-50-99.90	F3J240204005	Ni Dissolved
	P-50-109.90	F3J240204006	Ni Dissolved
	P-50-119.90	F3J240204007	Ni Dissolved
	P-50-129.90	F3J240204008	Ni Dissolved
	P-50-DUP-1 (P-50-129.90)	F3J240204009	Ni Dissolved
	P-50-139.90	F3J240204010	Ni Dissolved
	P-50-149.90	F3J240204011	Ni Dissolved
	P-50-159.90	F3J240204012	Ni Dissolved
	P-50-169.90	F3J240204013	Ni Dissolved
	P-50-179.90	F3J240204014	Ni Dissolved
	P-50-189.90 (also MS/MSD)	F3J240204015	Ni Dissolved
	P-49-74.25	F3J240204016	Ni Dissolved, Ni Total
	P-49-84.25	F3J240204017	Ni Dissolved
	P-49-94.3	F3J240204018	Ni Dissolved
	P-49-104.6	F3J240204019	Ni Dissolved
	P-49-114.3	F3J240204020	Ni Dissolved
	P-49-124.3	F3J240204021	Ni Dissolved
	P-49-134.3	F3J240204022	Ni Dissolved, Ni Total
	P-49-144.3	F3J240204023	Ni Dissolved
	P-49-167.3	F3J240204024	Ni Dissolved
	P-49-DUP-1 (P-49-167.3)	F3J240204025	Ni Dissolved
	P-49-177.3	F3J240204026	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3J240204 Cont'd	P-50-198.55	F3J240204028	Ni Dissolved
	P-51-77.78	F3J240204029	Ni Dissolved
	P-51-87.78	F3J240204030	Ni Dissolved
	P-51-97.78	F3J240204031	Ni Dissolved
	P-51-DUP-1 (P-51-97.78)	F3J240204032	Ni Dissolved
	P-51-107.78	F3J240204033	Ni Dissolved, Ni Total
	P-51-117.78	F3J240204034	Ni Dissolved
	P-51-127.78	F3J240204035	Ni Dissolved
	P-51-137.78	F3J240204036	Ni Dissolved
	P-51-147.78	F3J240204037	Ni Dissolved, Ni Total
	P-51-158.02	F3J240204038	Ni Dissolved
	P-51-167.78	F3J240204039	Ni Dissolved
	P-49-EB-1	F3J240204040	Ni Dissolved
	P-51-177.78	F3J240204041	Ni Dissolved
	P-51-EB-1	F3J240204042	Ni Dissolved, Ni Total
	P-50-EB-1 (also MS/MSD)	F3J240204043	Ni Total
F3J290103	P-50-206.64	F3J290103001	Ni Dissolved
	P-50-242.55	F3J290103002	Ni Dissolved
	P-50-249.90	F3J290103003	Ni Dissolved
	P-50-259.90	F3J290103004	Ni Dissolved
	P-50-267.44	F3J290103005	Ni Dissolved, Ni Total
	P-50-279.90	F3J290103006	Ni Dissolved
	P-50-289.90	F3J290103007	Ni Dissolved, Ni Total
	P-50-299.90	F3J290103008	Ni Dissolved, Ni Total
	P-50-309.90	F3J290103009	Ni Dissolved, Ni Total
	P-50-319.90	F3J290103010	Ni Dissolved, Ni Total
	P-50-327.07	F3J290103011	Ni Dissolved, Ni Total
	P-50-EB-2	F3J290103012	Ni Dissolved, Ni Total
	P-50-342.60	F3J290103013	Ni Dissolved, Ni Total
	P-50-DUP-2 (P-50-342.60)	F3J290103014	Ni Dissolved, Ni Total
	P-50-349.90 (also MS/MSD)	F3J290103015	Ni Dissolved, Ni Total
	P-50-359.90	F3J290103016	Ni Dissolved, Ni Total
	P-50-370.45	F3J290103017	Ni Dissolved, Ni Total
	P-50-376.74	F3J290103018	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3J290103 Cont'd	P-50-385.90	F3J290103020	Ni Dissolved, Ni Total
	P-49-222.3	F3J290103021	Ni Dissolved
	P-49-232.3	F3J290103022	Ni Dissolved
	P-49-239.3	F3J290103023	Ni Dissolved
	P-49-249.3 (also MS/MSD)	F3J290103024	Ni Dissolved
	P-49-261	F3J290103025	Ni Dissolved
	P-49-284.3	F3J290103027	Ni Dissolved
	P-49-314.0 (also MS/MSD)	F3J290103028	Ni Dissolved
	P-49-333.0	F3J290103029	Ni Dissolved
	P-49-324.0	F3J290103030	Ni Dissolved
	P-49-340.8	F3J290103031	Ni Dissolved
	P-49-DUP-2 (P-49-340.8)	F3J290103032	Ni Dissolved
	P-51-201.20	F3J290103034	Ni Dissolved, Ni Total
	P-51-226.75	F3J290103035	Ni Dissolved
	P-51-236.75	F3J290103036	Ni Dissolved
	P-51-DUP-2 (P-51-246.75)	F3J290103037	Ni Dissolved
	P-51-246.75	F3J290103038	Ni Dissolved
	P-51-256.75	F3J290103039	Ni Dissolved
	P-51-266.71	F3J290103040	Ni Dissolved
	P-51-276.75	F3J290103041	Ni Dissolved
	P-51-286.75	F3J290103042	Ni Dissolved
	P-51-295.25	F3J290103043	Ni Dissolved, Ni Total
	P-51-301.12	F3J290103044	Ni Dissolved
F3J310287	P-50-413.43	F3J310287001	Ni Total
	P-50-424.08	F3J310287002	Ni Dissolved
	P-50-434.90	F3J310287003	Ni Dissolved, Ni Total
	P-49-394.1 (also MS/MSD)	F3J310287004	Ni Dissolved
	P-49-423.0	F3J310287005	Ni Dissolved, Ni Total
	P-49-444.1	F3J310287006	Ni Dissolved
	P-49-463.2	F3J310287007	Ni Dissolved
	P-51-321.00	F3J310287008	Ni Dissolved, Ni Total
	P-51-327.85	F3J310287010	Ni Dissolved, Ni Total
	P-51-336.85 (Total also MS/MSD)	F3J310287011	Ni Dissolved, Ni Total
	P-51-346.85	F3J310287012	Ni Dissolved, Ni Total

Table 1-1: Sample Cross-Reference List			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3J310287 Cont'd	P-51-363.30	F3J310287013	Ni Dissolved, Ni Total
	P-51-371.80	F3J310287014	Ni Dissolved, Ni Total
	P-51-381.80	F3J310287015	Ni Dissolved
F3K080109	P-54-74.15	F3K080109001	Ni Dissolved
	P-54-87.55	F3K080109002	Ni Dissolved
	P-54-97.55	F3K080109003	Ni Dissolved
	P-54-107.55 (also MS/MSD)	F3K080109004	Ni Dissolved
	P-54-117.55	F3K080109005	Ni Dissolved, Ni Total
	P-54-127.55	F3K080109006	Ni Dissolved, Ni Total
	P-54-137.55 (Total also MS/MSD)	F3K080109007	Ni Dissolved, Ni Total
	P-54-DUP-1 (P-54-137.55)	F3K080109008	Ni Dissolved, Ni Total
	P-54-147.55	F3K080109009	Ni Dissolved, Ni Total
	P-54-155.75	F3K080109010	Ni Dissolved, Ni Total
	P-54-165.85	F3K080109011	Ni Dissolved, Ni Total
	P-54-177.55	F3K080109012	Ni Dissolved
	P-54-187.55	F3K080109013	Ni Dissolved
	P-52-EB-1	F3K080109014	Ni Dissolved
	P-52-80.0	F3K080109015	Ni Dissolved, Ni Total
	P-52-90.0	F3K080109016	Ni Dissolved, Ni Total
	P-52-100.0	F3K080109017	Ni Dissolved, Ni Total
	P-52-110.0	F3K080109018	Ni Dissolved
	P-52-120.0	F3K080109019	Ni Dissolved
	P-52-130.0	F3K080109020	Ni Dissolved, Ni Total
	P-52-140.0	F3K080109021	Ni Dissolved, Ni Total
	P-52-150.0	F3K080109022	Ni Dissolved, Ni Total
	P-52-160.0 (Dissolved also MS/MSD)	F3K080109023	Ni Dissolved, Ni Total
	P-52-170.0	F3K080109024	Ni Dissolved, Ni Total
	P-52-DUP-1 (P-52-170.0)	F3K080109025	Ni Dissolved, Ni Total
	P-52-180.0	F3K080109026	Ni Dissolved
	P-58-EB-1	F3K080109027	Ni Total
	P-58-79.65	F3K080109028	Ni Dissolved, Ni Total
	P-58-89.65	F3K080109029	Ni Dissolved
	P-58-99.65	F3K080109030	Ni Dissolved
	P-58-109.65	F3K080109031	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3K080109 Cont'd	P-58-119.65	F3K080109032	Ni Dissolved
	P-58-129.65	F3K080109033	Ni Dissolved
	P-58-139.65 (also MS/MSD)	F3K080109034	Ni Dissolved
	P-58-149.65	F3K080109035	Ni Dissolved
	P-58-159.65	F3K080109036	Ni Dissolved
	P-58-DUP-1 (P-58-159.65)	F3K080109037	Ni Dissolved
	P-58-169.65	F3K080109038	Ni Dissolved, Ni Total
	P-58-179.65	F3K080109039	Ni Dissolved, Ni Total
	P-58-189.65	F3K080109040	Ni Dissolved, Ni Total
	P-58-196.02	F3K080109041	Ni Dissolved
	P-58-213.20	F3K080109042	Ni Dissolved
	P-54-EB-1	F3K080109043	Ni Dissolved, Ni Total
F3K110173	P-58-274.65	F3K110173001	Ni Dissolved, Ni Total
	P-58-DUP-2 (P-58-274.65)	F3K110173002	Ni Dissolved, Ni Total
	P-58-284.65	F3K110173003	Ni Dissolved
	P-58-294.65	F3K110173004	Ni Dissolved
	P-58-304.65	F3K110173005	Ni Dissolved, Cr, Cr+6
	P-58-314.65	F3K110173007	Ni Dissolved, Ni Total
	P-58-323.15	F3K110173008	Ni Dissolved, Ni Total
	P-58-342.25	F3K110173009	Ni Dissolved, Ni Total
	P-58-402.40	F3K110173010	Ni Dissolved, Cr, Cr+6
	P-58-432.05 (Ni Dissolved, Ni Total, Cr, and Cr+6 also MS/MSD)	F3K110173011	Ni Dissolved, Ni Total, Cr, Cr+6
	P-52-224.5	F3K110173012	Ni Dissolved, Ni Total
	P-54-226.55	F3K110173013	Ni Dissolved
	P-54-236.55	F3K110173014	Ni Dissolved
	P-54-246.55	F3K110173015	Ni Dissolved
	P-54-256.55	F3K110173016	Ni Dissolved, Ni Total
	P-54-267.95	F3K110173017	Ni Dissolved
	P-54-DUP-2 (P-54-267.95)	F3K110173018	Ni Dissolved
	P-54-276.4	F3K110173019	Ni Dissolved, Ni Total
	P-54-285.4	F3K110173020	Ni Dissolved, Ni Total
	P-54-296.25	F3K110173021	Ni Dissolved, Ni Total
	P-54-303.55	F3K110173022	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3K110173 Cont'd	P-52-232.3	F3K110173023	Ni Dissolved, Ni Total
	P-52-243.7	F3K110173024	Ni Dissolved
	P-52-254.5	F3K110173025	Ni Dissolved
	P-52-264.5	F3K110173026	Ni Dissolved
	P-52-274.5	F3K110173027	Ni Dissolved
	P-52-283.5	F3K110173028	Ni Dissolved, Ni Total
	P-52-291.7 (also MS/MSD)	F3K110173029	Ni Dissolved
	P-52-299.5	F3K110173030	Ni Dissolved
F3K140242	P-58-471.35	F3K140242001	Ni Dissolved, Ni Total
	P-54-326.25	F3K140242002	Ni Dissolved, Ni Total
	P-54-334.4	F3K140242003	Ni Dissolved, Ni Total
	P-54-342.95 (Total also MS/MSD)	F3K140242004	Ni Dissolved, Ni Total
	P-54-351.25	F3K140242005	Ni Dissolved
	P-54-DUP-3 (P-54-351.25)	F3K140242006	Ni Dissolved
	P-54-360.8	F3K140242007	Ni Dissolved
	P-54-400.5	F3K140242008	Ni Dissolved, Ni Total
	P-52-319.2	F3K140242010	Ni Dissolved, Ni Total
	P-52-327.2	F3K140242011	Ni Dissolved, Ni Total
	P-52-339.2 (also MS/MSD)	F3K140242012	Ni Dissolved
	P-52-364.2	F3K140242013	Ni Dissolved, Ni Total
	P-52-DUP-2 (P-52-364.2)	F3K140242014	Ni Dissolved, Ni Total
	P-52-374.4	F3K140242015	Ni Dissolved, Ni Total
	P-52-395.4	F3K140242016	Ni Dissolved
	P-54-411.05	F3K140242017	Ni Dissolved, Ni Total
F3K210372	P-52-404.45	F3K210372001	Ni Dissolved
	P-52-414.15	F3K210372002	Ni Dissolved, Ni Total
	P-52-444.35	F3K210372003	Ni Dissolved
	P-52-483.38	F3K210372004	Ni Dissolved
	P-52-EB-2	F3K210372005	Ni Total
	EB-P-54-11-17	F3K210372007	Ni Dissolved, Ni Total
	P-54-421.00	F3K210372008	Ni Dissolved
	P-54-431.00	F3K210372009	Ni Dissolved
	P-54-437.05	F3K210372010	Ni Dissolved
	P-53-86.40	F3K210372011	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3K210372 Cont'd	P-53-EB-11-20	F3K210372012	Ni Dissolved, Ni Total
	P-53-76.40	F3K210372013	Ni Dissolved, Ni Total
F3K280120	P-53-96.40	F3K280120001	Ni Dissolved, Ni Total
	P-53-106.40	F3K280120002	Ni Dissolved, Ni Total
	P-53-116.40	F3K280120003	Ni Dissolved, Ni Total
	P-53-126.40	F3K280120004	Ni Dissolved
	P-53-136.40	F3K280120005	Ni Dissolved
	P-53-146.40	F3K280120006	Ni Dissolved, Ni Total
	P-53-DUP-1 (P-53-146.40)	F3K280120007	Ni Dissolved, Ni Total
	P-53-156.40 (also MS/MSD)	F3K280120008	Ni Dissolved
	P-53-165.70	F3K280120009	Ni Dissolved, Ni Total
	P-53-176.40	F3K280120010	Ni Dissolved
	P-53-188.85	F3K280120011	Ni Dissolved, Ni Total
	P-53-212.60	F3K280120012	Ni Dissolved, Ni Total
	P-53-221.35	F3K280120013	Ni Dissolved
	P-53-231.35	F3K280120014	Ni Dissolved
	P-53-238.55	F3K280120015	Ni Dissolved
	P-53-248.35	F3K280120016	Ni Dissolved
	P-53-256.35	F3K280120017	Ni Dissolved
	P-53-266.35	F3K280120018	Ni Dissolved
	P-53-DUP-2 (P-53-266.35)	F3K280120019	Ni Dissolved
	P-53-276.35	F3K280120020	Ni Dissolved
	P-53-286.35	F3K280120021	Ni Dissolved
	P-53-295.50	F3K280120022	Ni Dissolved
	P-53-306.00	F3K280120023	Ni Dissolved
	P-53-313.30 (also MS/MSD)	F3K280120024	Ni Dissolved
	P-34-EB-1	F3K280120025	Ni Total
	P-34-79.55 (Total also MS/MSD)	F3K280120026	Ni Dissolved, Ni Total
	P-34-89.55	F3K280120027	Ni Dissolved, Ni Total
	P-34-99.55	F3K280120028	Ni Dissolved, Ni Total
	P-34-109.55	F3K280120029	Ni Dissolved
	P-34-119.55	F3K280120030	Ni Dissolved
	P-34-129.55	F3K280120031	Ni Dissolved, Ni Total
	P-34-139.55	F3K280120032	Ni Dissolved, Ni Total

Table 1-1: Sample Cross-Reference List

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3K280120 Cont'd	P-34-DUP-1 (P-34-139.55)	F3K280120033	Ni Dissolved, Ni Total
	P-34-164.55	F3K280120034	Ni Dissolved, Ni Total
	P-34-154.55	F3K280120035	Ni Dissolved, Ni Total
	P-34-174.55	F3K280120036	Ni Dissolved
	P-34-184.55 (Dissolved also MS/MSD)	F3K280120037	Ni Dissolved, Ni Total
	P-34-194.55	F3K280120038	Ni Dissolved, Ni Total
	P-34-204.55	F3K280120039	Ni Dissolved, Ni Total
	P-34-214.55	F3K280120040	Ni Dissolved, Ni Total
	P-34-224.55	F3K280120041	Ni Dissolved, Ni Total
	P-34-234.55	F3K280120042	Ni Dissolved, Ni Total
	P-34-244.55	F3K280120043	Ni Dissolved, Ni Total
	P-34-DUP-2 (P-34-244.55) (Total also MS/MSD)	F3K280120044	Ni Dissolved, Ni Total
	P-34-254.55	F3K280120045	Ni Dissolved, Ni Total
	P-34-264.55	F3K280120046	Ni Dissolved, Ni Total
	P-34-284.55	F3K280120047	Ni Dissolved
	P-34-294.55	F3K280120048	Ni Dissolved
	P-34-304.50	F3K280120049	Ni Dissolved, Ni Total
	P-53-331.10	F3K280120051	Ni Dissolved
	P-53-340.05	F3K280120052	Ni Dissolved, Ni Total
F3L050365	P-34-324.50	F3L050365001	Ni Dissolved, Ni Total
	P-34-334.50 (Total also MS/MSD)	F3L050365002	Ni Dissolved, Ni Total
	P-34-352.73	F3L050365003	Ni Dissolved, Ni Total
	P-34-384.35	F3L050365004	Ni Dissolved, Ni Total
	P-34-394.55 (also MS/MSD)	F3L050365005	Ni Dissolved
	P-34-401.58	F3L050365006	Ni Dissolved
	P-53-366.65	F3L050365008	Ni Dissolved
	P-53-391.6	F3L050365009	Ni Dissolved, Ni Total
	P-53-401.10	F3L050365010	Ni Dissolved
	P-53-410.15	F3L050365011	Ni Dissolved, Ni Total
F3L090146	P-33-EB-1	F3L090146001	Ni Total
	P-33-79.6	F3L090146002	Ni Dissolved
	P-33-89.6	F3L090146003	Ni Dissolved
	P-33-99.6	F3L090146004	Ni Dissolved
	P-33-109.6	F3L090146005	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3L090146 Cont'd	P-33-119.6	F3L090146006	Ni Dissolved
	P-33-129.6	F3L090146007	Ni Dissolved
	P-33-139.6	F3L090146008	Ni Dissolved
	P-33-149.6 (Total also MS/MSD)	F3L090146009	Ni Dissolved, Ni Total
	P-33-159.6	F3L090146010	Ni Dissolved, Ni Total
	P-33-169.6	F3L090146011	Ni Dissolved
	P-33-179.6	F3L090146012	Ni Dissolved, Ni Total
	P-33-DUP-1 (P-33-169.6)	F3L090146013	Ni Dissolved
	P-33-189.6	F3L090146014	Ni Dissolved, Ni Total
	P-33-198.1	F3L090146015	Ni Dissolved, Ni Total
	P-33-214.6	F3L090146016	Ni Dissolved
	P-33-224.6	F3L090146017	Ni Dissolved
	P-53-426.75	F3L090146018	Ni Total
	P-53-480.90 (Dissolved also MS/MSD)	F3L090146019	Ni Dissolved
F3L120339	P-53-487.40	F3L120339001	Ni Dissolved, Ni Total
	P-53-497.00	F3L120339002	Ni Dissolved
	P-53-504.80	F3L120339003	Ni Dissolved, Ni Total
	P-33-234.6	F3L120339004	Ni Dissolved
	P-33-244.6	F3L120339005	Ni Dissolved, Ni Total
	P-33-254.6	F3L120339006	Ni Dissolved, Ni Total
	P-33-264.6	F3L120339007	Ni Dissolved
	P-33-274.6 (Total also MS/MSD)	F3L120339008	Ni Dissolved, Ni Total
	P-33-284.6	F3L120339009	Ni Dissolved
	P-33-294.6	F3L120339010	Ni Dissolved, Ni Total
	P-33-304.6	F3L120339011	Ni Dissolved, Ni Total
	P-33-DUP-2 (P-33-304.6)	F3L120339012	Ni Dissolved, Ni Total
	P-33-344.3	F3L120339013	Ni Dissolved
	P-33-374.3 (Dissolved also MS/MSD)	F3L120339014	Ni Dissolved, Ni Total
	P-33-412.4	F3L120339015	Ni Dissolved, Ni Total
F3L160348	P-33-423.8	F3L160348001	Ni Dissolved
	P-33-432.6	F3L160348002	Ni Dissolved, Ni Total
	P-33-454.3	F3L160348003	Ni Dissolved
	P-33-481.1 (Dissolved also MS/MSD)	F3L160348004	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F4A130259	P-31-79.25	F4A130259002	Ni Dissolved
	P-31-89.25	F4A130259003	Ni Dissolved
	P-31-99.25	F4A130259004	Ni Dissolved
	P-31-111.67	F4A130259005	Ni Dissolved
	P-31-EB-2 (also MS/MSD)	F4A130259006	Ni Total
	P-31-124.25	F4A130259007	Ni Dissolved
	P-31-134.25	F4A130259008	Ni Dissolved
	P-31-143.30	F4A130259009	Ni Dissolved
	P-31-184.25	F4A130259010	Ni Total
	P-31-190.40	F4A130259011	Ni Dissolved
	P-31-DUP-1 (P-31-190.40)	F4A130259012	Ni Dissolved
	P-31-199.25 (also MS/MSD)	F4A130259013	Ni Dissolved
	P-31-223.75	F4A130259014	Ni Dissolved
	P-31-233.11	F4A130259015	Ni Dissolved, Ni Total
	P-31-244.25	F4A130259016	Ni Dissolved
	P-31-254.25	F4A130259017	Ni Dissolved
	P-31-263.70	F4A130259018	Ni Dissolved
	P-55-EB-1	F4A130259019	Ni Dissolved, Ni Total
	P-55-74.55	F4A130259020	Ni Dissolved
	P-55-84.10	F4A130259021	Ni Dissolved, Ni Total
	P-55-94.55	F4A130259022	Ni Dissolved, Ni Total
	P-55-104.55	F4A130259023	Ni Dissolved
	P-55-114.55	F4A130259024	Ni Dissolved, Ni Total
	P-55-DUP-1 (P-55-154.55)	F4A130259025	Ni Dissolved
	P-55-124.55	F4A130259026	Ni Dissolved
	P-55-134.55	F4A130259027	Ni Dissolved
	P-55-144.55	F4A130259028	Ni Dissolved, Ni Total
	P-55-154.55 (also MS/MSD)	F4A130259029	Ni Dissolved
	P-55-164.55	F4A130259031	Ni Dissolved
F4A150320	P-31-284.25	F4B150320001	Ni Dissolved, Ni Total
	P-31-294.25	F4B150320002	Ni Dissolved, Ni Total
	P-31-304.25	F4B150320003	Ni Dissolved
	P-31-344.25	F4B150320004	Ni Dissolved
	P-31-351.55	F4B150320005	Ni Dissolved
	P-31-DUP-2 (P-31-351.55)	F4B150320006	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F4A150320 Cont'd	P-55-174.55	F4B150320008	Ni Dissolved, Ni Total
	P-55-186.15	F4B150320009	Ni Dissolved
	P-55-244.40	F4B150320011	Ni Dissolved
	P-55-254.40	F4B150320012	Ni Dissolved
	P-55-264.40	F4B150320013	Ni Dissolved, Ni Total
	P-55-271.00	F4B150320014	Ni Dissolved
F4A230292	P-31-363.2	F4A230292001	Ni Dissolved
	P-31-374.25	F4A230292002	Ni Dissolved
	P-31-404.25	F4A230292003	Ni Dissolved, Ni Total
	P-56-EB-1	F4A230292004	Ni Dissolved, Ni Total
	P-56-76-55	F4A230292005	Ni Dissolved
	P-56-86.55	F4A230292006	Ni Dissolved, Ni Total
	P-56-96.55	F4A230292007	Ni Dissolved, Ni Total
	P-56-106.55	F4A230292008	Ni Dissolved, Ni Total
	P-56-116.55	F4A230292009	Ni Dissolved, Ni Total
	P-56-126.55	F4A230292010	Ni Dissolved
	P-56-136.55 (also MS/MSD)	F4A230292011	Ni Dissolved
	P-56-146.55	F4A230292012	Ni Dissolved, Ni Total
	P-56-156.55	F4A230292013	Ni Dissolved
	P-56-166.55	F4A230292014	Ni Dissolved
	P-56-176.55	F4A230292015	Ni Dissolved
	P-56-186.55	F4A230292016	Ni Dissolved
	P-56-194.40	F4A230292017	Ni Dissolved
	P-31-414.25	F4A230292018	Ni Dissolved
	P-56-DUP (P-56-86.55)	F4A230292019	Ni Dissolved, Ni Total
F4A300327	P-31-444.25	F4A300327001	Ni Dissolved
	P-55-294.45	F4A300327002	Ni Dissolved
	P-55-304.45	F4A300327003	Ni Dissolved, Ni Total
	P-55-311.95	F4A300327004	Ni Dissolved, Ni Total
	P-55-DUP-2 (P-55-311.95)	F4A300327005	Ni Dissolved, Ni Total
	P-55-334.55 (Total also MS/MSD)	F4A300327006	Ni Dissolved, Ni Total
	P-55-340.35	F4A300327007	Ni Dissolved, Ni Total
	P-55-374.35	F4A300327008	Ni Dissolved
	P-56-388.60	F4A300327010	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F4A300327 Cont'd	P-55-EB-3	F4A300327011	Ni Total
	P-56-211.45	F4A300327012	Ni Dissolved, Ni Total
	P-56-221.45	F4A300327013	Ni Dissolved, Ni Total
	P-56-231.45	F4A300327014	Ni Dissolved
	P-56-241.45	F4A300327015	Ni Dissolved
	P-56-251.45	F4A300327016	Ni Dissolved
	P-56-261.45	F4A300327017	Ni Dissolved
	P-56-305.90	F4A300327018	Ni Dissolved
	P-56-316.45	F4A300327019	Ni Dissolved, Ni Total
	P-56-324.20 (also MS/MSD)	F4A300327020	Ni Dissolved
	P-56-346.60	F4A300327060	Ni Dissolved
	P-56-354.00	F4A300327022	Ni Dissolved
F4B110140	P-55-404.45 (also MS/MSD)	F4B110140001	Ni Dissolved
	P-55-425.35	F4B110140002	Ni Dissolved
	P-55-434.45	F4B110140003	Ni Dissolved, Ni Total
	P-55-442.25	F4B110140004	Ni Dissolved, Ni Total
	P-32-79.95	F4B110140005	Ni Dissolved
	P-32-89.35	F4B110140006	Ni Dissolved
	P-32-99.35	F4B110140007	Ni Dissolved
	P-32-109.35	F4B110140008	Ni Dissolved
	P-32-119.35	F4B110140009	Ni Dissolved
	P-32-128.75	F4B110140010	Ni Dissolved
	P-32-139.35	F4B110140011	Ni Dissolved
F4B130279	P-32-174.35	F4B130279001	Ni Dissolved
	P-32-DUP-1 (P-32-174.35)	F4B130279002	Ni Dissolved
	P-32-184.35	F4B130279003	Ni Dissolved
	P-32-194.35	F4B130279004	Ni Dissolved
	P-32-224.35 (Total also MS/MSD)	F4B130279005	Ni Dissolved, Ni Total
	P-32-234.35	F4B130279006	Ni Dissolved, Ni Total
	P-32-241.01	F4B130279007	Ni Dissolved, Ni Total
	P-32-251.77	F4B130279008	Ni Dissolved
	P-32-259.35	F4B130279009	Ni Dissolved, Ni Total
	P-32-269.35	F4B130279010	Ni Dissolved, Ni Total
	P-32-279.35	F4B130279011	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F4B170134	P-32-289.35 (Dissolved also MS/MSD)	F4B170134002	Ni Dissolved, Ni Total
	P-32-299.35	F4B170134003	Ni Dissolved
	P-32-309.35	F4B170134004	Ni Dissolved, Ni Total
	P-32-352.0	F4B170134005	Ni Dissolved, Ni Total
	P-32-359.25	F4B170134006	Ni Dissolved
	P-32-369.25	F4B170134007	Ni Dissolved
	P-32-379.25	F4B170134008	Ni Dissolved
	P-32-387.80	F4B170134009	Ni Dissolved
	P-32-DUP-2 (P-32-359.25)	F4B170134010	Ni Dissolved
F4B200226	P-32-411.3	F4B200226001	Ni Dissolved
	P-32-419.3	F4B200226002	Ni Dissolved, Ni Total
	P-32-426.7	F4B200226003	Ni Dissolved, Ni Total
	P-32-461.0	F4B200226004	Ni Dissolved, Ni Total
	P-32-481.0	F4B200226005	Ni Dissolved, Ni Total
	P-32-488.9	F4B200226006	Ni Dissolved, Ni Total
	P-32-DUP-3 (P-32-488.9) (Dissolved also MS/MSD)	F4B200226007	Ni Dissolved, Ni Total

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report summarizes the findings of the review and outlines any deviations from the applicable quality control (QC) criteria referenced in the following documents:

- *Analytical Services Protocol,* New York State Department of Environmental Conservation. Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.

- GTE Operations Support Incorporated (GTEOSI). *Groundwater Investigation Work Plan (QAPP: Appendix C), Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* URS, September 2002.

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* (SW-846) USEPA, Final Update IIIA. April 1998.

- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* EPA 540-R-01-008. July 2002.

1.3. Analytical Methods

The environmental samples presented in this report were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for selected metals, including nickel, analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW-846 Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by FLAA or ICP Spectroscopy
- SW-846 Method 6010B: Inductively Coupled Plasma-Atomic Emission Spectrometry
- SW-846 Method 7196A: Chromium, Hexavalent (Colorimetric)

The laboratory assigned an SDG number to a group of samples during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and QC analyses. A total of 1,123[9] samples in a total of 64 SDGs are included in this data validation report. Of the 1,123 total number of samples, 14 were analyzed for total beryllium, 23 for total chromium, 7 for hexavalent chromium, 14 for total copper, 14 for total thallium, 499 for total nickel, 804 for dissolved nickel, and 24 for unspecified[10] nickel. The SDG, field identification, and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. Section 3 presents a summary of the findings associated with the validation and a discussion of the specific QA/QC deviations and qualifications performed on the sample data. Section 4 presents a discussion of data completeness and usability. Section 5 presents the Data Usability Summary Report (DUSR) summary information.

[9] Each sample may have been analyzed for more than one metal and may have included total recoverable and dissolved fractions.
[10] It was not specified whether total or dissolved nickel was collected.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (GTEOSI, 2002), the analytical methodologies, the data validation guidelines referenced in Section 1, and professional judgment[11]. MPI performed a data review of all analytical results to assess data quality. A data review includes an assessment of sample handling protocols and supporting laboratory and field QC parameters. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements
- Analytical methods performed and test method references
- Sample condition - review of log-in records for cooler temperature, chemical preservation, etc.
- Holding times - comparison of collection, preparation, and analysis dates
- Analytical results - units, values, significant figures
- Sample traceability to raw data
- Initial calibration – comparison to technical guideline criteria
- Continuing calibration – comparison to technical guideline criteria
- Initial and continuing calibration blanks
- Method blank results and laboratory contamination
- Laboratory control sample (LCS) results and comparison to laboratory control limits
- Matrix spike/matrix spike duplicate (MS/MSD) results and comparison to laboratory control limits
- Matrix duplicate analyses
- Field replicate/duplicate results and comparison to technical guideline criteria
- Field QC sample (i.e., equipment blanks and field blanks)
- Reporting limits and Dilutions
- Electronic Data Deliverables (EDDs) – comparison to the hardcopy analytical report

The analytical reports were reviewed for completeness and the accompanying QC data were reviewed for acceptable performance. When QC results indicated poor performance, MPI applied data qualifiers to the

[11] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

results to inform the data user of the possible performance problem. These qualifiers are in addition to or a revision of the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory for metals analyses:

"U" Non-detect result at the established laboratory reporting limit.

"B" Indicates an estimated value or a value below the established reporting limit but above the method detection limit.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

"U" The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

"J" The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

"UJ" The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

"R" The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets Site-specific criteria for data quality and use. It was developed to review and evaluate the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

2. *Have all holding times been met?*

3. *Do all the QC data: blanks, calibration standards, calibration verifications, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?*

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

6. *Have the correct data qualifiers been used?*

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes whether the QA/QC parameters reported, which were specified in Section 2.1, met validation criteria. Summary of the individual components of the review are described in the following sub-sections.

3.2. Review of Validation Criteria

3.2.1. Completeness Review

The laboratory provided the analytical report using Contract Laboratory Program (CLP) –like format. With the exception of forms and raw data detailed in Section 3.2.5, all necessary documents were included in the report packages including a case narrative summarizing the QC issues associated with the project analyses.

3.2.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. They included USEPA SW-846 Method 3010 (digestion of aqueous samples) followed by Method 6010B (ICP) for metals analysis, and Method 7196A for hexavalent chromium analysis. No method anomalies were noted.

3.2.3. Sample Receipt

The laboratory received 1,123 aqueous samples[12] for metals analysis between March 18, 2003 and February 20, 2003. Samples collected for different analysis from the same profile at the same depth are defined as the same sample within this data validation report. The sample temperatures at the time of receipt by the laboratory were within the recommended temperature range of 4°C ± 2°C for almost all SDGs. Field and laboratory personnel completed the chain-of-custody (COC) documents recording the signature, date, and time of custody transfer. The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This form identifies whether the containers were received undamaged, within the proper temperature range, at the proper pH, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory.

The following problems with sample receipts were found:

- SDG F3E290170: there was a sample container, which was not labeled – the laboratory resolved the sample identity through a process of elimination and informed MPI.
- SDG F3F030298: sample P-15-230.00 was not submitted but was on the COC; sample P-15-228.00 was not written on the COC but was submitted – the laboratory made corrections after contacting MPI. Also, samples P-D-207.1 and P-D-197.1 were preserved at the laboratory subsequent to checking the pH – no data validation qualifications are necessary.
- SDG F3F120220: samples P-C-159.6 and P-C-169.6 were crossed off the COC by accident. The samples were received by the laboratory in good condition.

[12] Each sample may have been analyzed for more than one metal and may have included total recoverable and dissolved fractions.

- SDG F3F260187: sample FB-6-24 was relabeled on the COC as P-23-FB1, but was not relabeled on one of the sample bottles.

- SDG F3G110256: sample P-35-DUP-1 was mistakenly documented as P-35-DUP-2 during the laboratory's sample log-in process, resulting in the wrong sample ID reported – the ID was manually corrected during the validation process.

- SDG F3G150156: three samples were received at the laboratory with no sample ID: two were identified based on sampling time, the other one was matched based on what was left on the COC as P-25-320.0 (this bottle's sampling time did not match any samples on the COC).

- SDG F3G250374: sample P-42-79.6 on the COC was labeled as P-42-79.5 on the sample bottle. The COC designation was used. Also, bottle for sample P-42-EB-2 was not received by the laboratory; and therefore, could not be analyzed.

- SDG F3G290207: sample P-42-336.8 was labeled as P-42-339.8 on the sample bottle; the laboratory data are labeled as P-42-339.8 – the ID was manually corrected during the validation process. The COC also had sample TB-724728 included, which was not submitted for analysis.

- SDG F3H060192: a labeled bottle for sample P-45-71.25 was received by the laboratory but was not included in the COC. The laboratory added the sample for nickel analysis on the COC.

- SDG F3H130195: samples P-45-291.65 and P-45-311.65 were mistakenly documented as P-45-291.25 and P-45-311.25, respectively, during the laboratory's sample log-in process, resulting in the wrong sample ID reported – the ID was manually corrected during the validation process.

- SDG F3H180106: all samples were received at the laboratory at 29 degrees Celsius. All of the ice within the shipping cooler had melted as it took Federal Express four days to deliver the cooler. No qualification actions are performed because the concentration of nickel is not expected to be affected with this increase in temperature.

- SDG F3H270230: the sample bottle labeled as P-37-265.85 is labeled as P-37-264.85 on the COC. The correct ID is P-37-265.85 and was manually corrected on the reports during this validation process.

- SDG F3H280315: samples P-46-330.21 and P-46-307.69 had Cr+6 requested on the COC; however, the laboratory was unable to perform the analysis because the samples received were preserved with HNO3.

- SDG F3I040177: sample P-44-79.3 was not listed on the COC. Also, sample P-44-109.8 required pH adjustment to <2 at the laboratory as the pH was received at 5. No validation qualification is necessary.

- SDG F3I090305: sample P-47-DUP-1 was not submitted but was on the COC. The analysis was not performed.

- SDG F3I230231: sample P-29-318.9 was mistakenly documented as P-29-389.9 during the laboratory's sample log-in process, resulting in the wrong sample ID reported – the ID was manually corrected during the validation process. Samples P-29-310.2 and P-29-360.0 for hexavalent chromium had already exceeded the 24 hour holding time by the time they were shipped to the laboratory.

- SDG F3J030259: samples P-30-89.50 and P-30-99.50 were mistakenly documented as P-30-89.55 and P-30-99.55, respectively, during the laboratory's sample log-in process, resulting in the wrong sample ID reported – the ID was manually corrected during the validation process. This SDG had both total and dissolved nickel samples. The laboratory only identified some of the dissolved samples as dissolved. The IDs were manually corrected to reflect total and dissolved samples during the validation process to maintain consistency for this SDG.

- SDG F3J070236: samples P-30-224.55, P-30-232.85, P-30-244.5, P-30A-260.85, P-30A-269.00, and P-18-EB-1 were labeled for dissolved nickel on the COC; however, the bottles were not labeled for dissolved or filtered. The laboratory correctly identified the samples as for dissolved. Sample P-30A-307.4 was requested for both dissolved and total nickel. The laboratory performed both analyses but had identified on both reports as total. One of them was hand corrected as dissolved, through the validation process, based on time of analysis in association with other dissolved nickel analysis.

- SDG F3J110172: samples P-18-257.65 and P-18-267.65 were labeled for dissolved nickel on the COC; however, the bottles were not labeled for dissolved or filtered. The laboratory correctly identified the samples as for dissolved.

- SDG F3J290103: sample P-51-295-25 was submitted for total nickel, in addition to the dissolved nickel that was specified on the COC. Both analyses were performed.

- SDG F3K080109: sample P-54-EB-1 was received for total and dissolved nickel but was not listed on the COC. The laboratory added it onto the COC.

- SDG F3K110173: sample P-54-267.95 was mistakenly documented as P-54-268.95 during the laboratory's sample log-in process, resulting in the wrong sample ID reported; the ID is manually corrected during the validation process. Samples P-58-304.65 and P-58-402.40 were not at the correct pH when received at the laboratory; the laboratory preserved it at receipt. The laboratory did not document the specific fraction - no data validation qualifications are necessary.

- SDG F3K210372: sample P-53-86.40 was mistakenly documented as P-54-86.40 during the laboratory's sample log-in process, resulting in the wrong sample ID reported; the ID was manually corrected during the validation process.

- SDG F3L090146: sample P-53-426.75 was identified as total on the COC and as filtered on the sample container. The laboratory correctly identified it as total.

- SDG F4A230292: sample P-56-DUP was received for total and dissolved nickel but was not listed on the COC. The laboratory added it onto the COC.

- SDG F4A300327: sample P-56-388.60 was received for total and dissolved nickel and sample P-55-EB-3 was received for total nickel, but they were not listed on the COC. The laboratory added them onto the COC. Three samples were identified as for dissolved nickel on the COC but not on the sample bottles. The laboratory correctly identified them as dissolved for their analysis.

- SDG F4B110140: sample P-32-EB-1 for total nickel was submitted to the laboratory but was crossed off on the COC by mistake. The laboratory should have analyzed it but did not.

There were no custody seals attached to individual sample containers. No qualification is necessary because the exterior of the shipment coolers had intact custody seals. However, some cooler exteriors were noted to have no custody seals: SDGs F3F120220, F3F170126, F3F260187, F3G150156, F3I150101, F3L090146, F3L160348, and F3B200226. Based on professional judgment, no qualifications are performed because the custodies during shipment were maintained by Federal Express and the coolers were shipped over-night with early morning arrival at the laboratory.

3.2.4. Holding Times

The laboratory performed all beryllium, copper, nickel, thallium, and total chromium analyses within the EPA-recommended holding time of 180 days for acid preserved samples.

The holding time for hexavalent chromium is 24 hours from time of sample collection. Holding time for the following hexavalent chromium samples were not met:

- SDG F3I230231: samples P-29-310.2 and P-29-360.0. The samples were received outside of holding time. Since the hexavalent chromium results for these two samples were non-detects, the results were qualified as unusable, "R."

- SDG F3K110173: samples P-58-304.65 and P-58-402.40. The samples were received outside of holding time. Since the hexavalent chromium results for these two samples were non-detects, the results were qualified as unusable, "R."

3.2.5. Analytical Results

For each sample tested, the laboratory provided the analytical test information using a laboratory standard format, which shows critical information pertaining to the analyses performed. The information provided includes the following: the laboratory name; the project name; the analysis type; the laboratory sample ID; matrix; date sampled; date received; preparation batch ID; the result; the reporting limit; the units of measure; the laboratory method; dilution factor; analysis time; preparation date; analysis date; work order number, and laboratory qualifiers (if any). The laboratory provided all the appropriate forms for the requested methods with the following exceptions.

- SDG F3I040177: chromium calibration forms were not included. The chromium information missing in the calibration forms were found within the raw data.

- SDG F3K110173: hexavalent chromium calibration forms and raw data were not included.

- SDG F3K210372: five results for total nickel and four results for dissolved nickel analyses were mistakenly reported with the wrong values on the reporting forms (Form 1). The results were corrected from the raw data during the validation process.

- SDG F3J240204: sample P-51-177.78 was mistakenly logged in at the laboratory as P-49-177.78. The ID was manually corrected on the report form (Form 1) during the validation process.

3.2.6. Traceability to Raw Data

Traceability of the metals analyses is established by the digestion (preparation) logs. These forms list the project samples analyzed per laboratory batch processed and the corresponding QC samples (e.g., preparation blank and laboratory control sample) performed with the project samples. All project samples analyzed, for all SDGs, were included on the applicable forms.

3.2.7. Initial Calibration

The laboratory prepared an initial calibration (ICAL) curve for each analyte in accordance with method criteria. All ICALs are acceptable. Initial calibration verification (ICV) standards were analyzed immediately after each ICAL, with recoveries all within ± 10% of the true values for all analytes. All ICVs are acceptable.

3.2.8. Continuing Calibration Verification

The continuing calibration verification (CCV) standards were analyzed after the ICALs and after every 10 project samples as required by the reference test method. The percent recoveries were all within ± 10% of the true values for all analytes. All CCVs are acceptable.

3.2.9. Initial and Continuing Calibration Blanks

The initial calibration blank (ICB) and continuing calibration blanks (CCB) were analyzed after the ICALs and after every 10 project samples as required by the reference test method. In general, most initial and continuing calibration blank results were less than the laboratory reporting limit, but in a few cases the blank results were greater than the laboratory MDL or (-MDL). For these cases, if an analyte in the associated field samples was detected at a concentration greater than the MDL but less than the laboratory reporting limit, the validation process qualified the result to account for the potential contamination associated with the analysis system. A summary of the samples and analytes that were revised due to laboratory contamination are presented in Table 3-1.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	*Sample ID*	*Analyte*	*Action*
F3C190235	MW-10	Beryllium	Revise to "U" non-detect
F3D290160			None
F3E020153	P-F-96.48 P-F-106.46	Nickel	Revise to "U" non-detect
F3E090278			None
F3E140308	P-26-86.8 P-26-96.8 P-26-106.8 P-26-116.8 P-26-126.8 P-26-136.8 P-26-146.8	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3E160130			None
F3E230179			None
F3E200165			None
F3E290170			None
F3F030298			None
F3F050171			None
F3F120220			None
F3F170126			None
F3F180192			None

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3F200145			None
F3F260187	P-23-80.1 P-23-90.1 P-23-100.1 P-23-110.1 P-23-130.1 P-23-140.1 P-23-150.1 P-23-170.1 P-23-180.1 P-23-DUP-1	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3F270132			None
F3G010309	P-23-262.0 P-23A-293.50	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3G030162	P-23A-DUP.1 P-23A-347.6	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3G110256	P-25-79.7 P-25-89.7 P-25-99.1 P-25-139.7 P-25-149.7 P-25-159.7 P-25-169.7 P-25-179.7 P-25-189.7 P-25-199.7 P-25-209.7 P-25-219.7 P-25-DUP-1 P-35-77.2 P-35-87.2 P-35-137.2 P-35-147.2 P-35-157.2 P-35-167.2 P-35-177.2 P-35-DUP-1	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3G150156	P-25-229.5 P-25-239.5 P-25-249.5 P-25-259.5 P-25-269.5 P-25-275.8 P-25-DUP-2 P-25-290.0 P-25-300.0 P-25-310.0 P-25-320.0 P-25-330.0 P-25-340.0 P-25-349.4 P-25-379.2 P-35-187.2 P-35-197.2 P-35-207.2 P-35-227.2 P-35-237.2 P-35-247.2 P-35-257.2 P-35-267.2 P-35-277.2 P-35-322.2 P-35-332.2 P-35-DUP-2 P-35-342.2 P-35-347.2	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3G230216	P-H-76.8 P-H-86.8 P-H-106.8 P-H-116.8	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3G250374	P-H-126.8 P-H-DUP1 P-H-136.8 P-H-146.8 P-H-156.8 P-H-166.8 P-H-176.8 P-H-186.8 P-42-189.6 P-42-197.7 P-42-202.7 P-42-DUP-1 P-42-99.6 P-42-109.6 P-42-139.6 P-42-149.6 P-42-159.6 P-42-169.4	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3G290207	P-H-226.55	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3H010243			None

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	*Sample ID*	*Analyte*	*Action*
F3H060192	P-20-79.60 P-20-89.60 P-20-99.60 P-20-109.60 P-20-119.60 P-45-81.25 P-45-91.25 P-45-101.25 P-45-111.25 P-45-121.25 P-45-131.25 P-45-DUP1	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3H080219	P-20-189.60 P-20-DUP1 P-45-151.25 P-45-167.25 P-45-197.25 P-45-207.25 P-45-217.25 P-45-227.25 P-45-237.25	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3H130195	P-20-359.60 P-20-379.60 P-20-369.60	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3H180106			None
F3H210288			None
F3H220246			None
F3H270230			None
F3H280315			None
F3I040177	P-44-89.8 P-44-99.3 P-44-DUP 1 P-44-109.8 P-44-121.55 P-44-79.3	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-46-389.28	Chromium	Revise to "U" non-detect at PQL, for all detects < PQL.
F3I050189	P-44-131.1 P-44-139.8 P-44-149.8 P-44-159.8 P-44-169.8 P-44-179.8 P-44-199.8 P-47-77.1 P-47-87.08	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3I090305			None
F3I120107			None
F3I150101			None
F3I180259			None

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3I230231	P-29-278.4 P-29-289.85 P-29-299.85 P-29-310.2 P-29-318.9 P-29-329.85 P-29-DUP-2 P-29-339.5 P-29-360.0 P-29-369.2 P-38-166.3 P-38-176.3 P-38-186.3 P-38-216.3 P-38-226.3 P-38-312.9 P-38-322.9 P-38-DUP-2 P-38-332.3 P-38-341.1 P-43-264.85 P-43-274.85 P-43-284.85	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-29-310.2	Chromium	Revise to "U" non-detect at PQL, for all detects < PQL.
F3I250196	P-38-370.1 P-38-381.3 P-38-391.3 P-38-DUP-3 P-29-410.7	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3J030259	P-30-149.50	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3J070236	P-18-76.65 P-18-86.65 P-18-96.65 P-18-106.65 P-18-116.65 P-18-126.65 P-18-136.65 P-18-146.65 P-18-156.65 P-18-DUP-1 P-18-166.65 P-18-176.65 P-18-186.65	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3J110172			None
F3J240204	P-50-198.55 P-51-77.78 P-51-117.78 P-51-137.78 P-51-158.02	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3J290103			None
F3J310287	P-51-363.30 P-51-371.80	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3J310287 Cont'd	P-50-434.90 P-51-321.00 P-51-327.85 P-51-371.80 P-51-381.80	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3K080109	P-54-117.55 P-54-127.55 P-54-137.55 P-54-DUP-1 P-54-147.55 P-54-155.75 P-54-165.85 P-52-80.0 P-52-90.0 P-52-100.0 P-52-130.0 P-52-140.0 P-58-79.65	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-52-80.0 P-52-90.0 P-52-100.0 P-52-110.0 P-52-120.0 P-52-130.0 P-52-140.0 P-58-79.65 P-58-89.65 P-58-99.65 P-58-109.65 P-58-119.65 P-58-189.65	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3K110173	P-58-304.65 P-58-402.40	Chromium	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-58-314.65 P-58-323.15 P-54-256.55 P-54-276.4 P-54-285.4 P-54-296.25 P-54-303.55	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.
F3K140242			None
F3K210372	P-52-404.45 P-52-483.38 P-54-421.00 P-54-431.00 P-54-437.05 P-53-86.40 P-53-76.40	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3K280120	P-53-96.40 P-53-106.40 P-53-116.40 P-53-126.40 P-53-136.40 P-53-146.40 P-53-DUP-1 P-53-156.40 P-53-165.70 P-53-176.40 P-53-188.85 P-53-212.60 P-53-221.35 P-53-231.35 P-53-238.55	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3L050365			None
F3L090146			None
F3L120339			None
F3L160348			None
F4A130259	P-55-94.55 P-55-114.55 P-55-144.55	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-31-79.25 P-31-89.25 P-31-111.67 P-31-124.25 P-31-134.25 P-31-190.40 P-31-DUP-1 P-31-223.75 P-31-233.11 P-31-263.70 P-55-94.55 P-55-104.55 P-55-114.55 P-55-DUP-1 P-55-124.55 P-55-134.55 P-55-144.55 P-55-154.55 P-55-164.55	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F4A150320	P-31-294.25 P-31-304.25 P-31-344.25 P-55-174.55 P-55-186.15	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL
F4A230292	P-31-404.25 P-56-116.55	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F4A230292 Cont'd	P-31-404.25 P-56-96.55 P-56-106.55 P-56-116.55 P-56-126.55 P-56-146.55 P-56-156.55 P-56-186.55 P-56-194.40 P-31-414.25	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F4A300327	P-55-311.95 P-55-DUP-2 P-55-334.55 P-55-340.35 P-56-388.60	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-55-304.45 P-55-311.95 P-55-DUP-2 P-55-334.55 P-55-340.35 P-55-374.35 P-56-388.60 P-56-211.45 P-56-221.45 P-56-241.45 P-56-251.45 P-56-316.45	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL
F4B110140	P-55-434.45 P-55-442.25	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL
F4B130279	P-32-224.35 P-32-234.35 P-32-241.01	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL
F4B170134			None
F4B200226	P-32-426.7	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL

3.2.10. Laboratory Method Blanks (Preparation Blanks)

There were contaminants detected in some preparation blanks. When contamination is detected, the corresponding project sample results for the identified contaminants were revised to non-detect if the associated sample results were less than five times the method blank results in accordance with the QAPP (GTEOSI, 2002). A summary of the samples and analytes that were revised due to laboratory contamination are presented in Table 3-2.

Table 3-2. *Evaluation of Laboratory Method Blanks*

Package Identification	*Sample ID*	*Analyte*	*Action*
F3C190235			None
F3D290160			None
F3E020153			None
F3E090278			None
F3E140308			None
F3E160130			None
F3E230179			None
F3E200165			None
F3E290170			None
F3F030298			None
F3F050171			None
F3F120220			None
F3F170126			None
F3F180192			None
F3F200145			None
F3F260187			None
F3F270132			None
F3G010309			None
F3G030162			None
F3G110256	P-35-137.2* P-35-147.2* P-35-157.2* P-35-167.2* P-35-177.2* P-35-DUP-1*	Nickel	Revised to "U" (non-detect)

Table 3-2. *Evaluation of Laboratory Method Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3G150156	P-25-229.5* P-25-239.5* P-25-249.5* P-25-259.5* P-25-269.5* P-25-275.8* P-25-DUP-2* P-25-290.0* P-25-300.0* P-25-310.0* P-25-320.0* P-25-330.0* P-25-340.0* P-25-349.4* P-25-379.2* P-35-187.2* P-35-197.2* P-35-207.2* P-35-217.2 P-35-227.2* P-35-237.2* P-35-247.2* P-35-257.2* P-35-267.2* P-35-277.2* P-35-322.2* P-35-332.2* P-35-DUP-2* P-35-342.2* P-35-347.2*	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3G230216			None
F3G250374			None
F3G290207			None
F3H010243			None
F3H060192			None
F3H080219			None
F3H130195	P-20-359.60* P-20-379.60* P-20-369.60*	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3H180106			None
F3H210288			None
F3H220246			None
F3H270230			None
F3H280315			None
F3I040177			None
F3I050189			None

Table 3-2. *Evaluation of Laboratory Method Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3I090305	P-46-480.25 P-46-490.25 P-44-DUP-2 P-44-257.1 P-44-284.85 P-44-299.85 P-44-349.8 P-47-97.1	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3I120107			None
F3I150101			None
F3I180259			None
F3I230231			None
F3I250196			None
F3J070236	P-18-76.65 P-18-96.65 P-18-106.65 P-18-126.65 P-18-136.65 P-18-156.65 P-18-DUP-1 P-18-186.65	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3J110172			None
F3J030259			None
F3J240204	P-49-74.25 P-49-177.3	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
	P-50-189.90 P-49-74.25 P-49-104.6 P-49-134.3 P-50-198.55* P-51-77.78*	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3J290103			None
F3J310287	P-50-434.90* P-51-321.00* P-51-327.85* P-51-371.80* P-51-381.80*	Nickel Dissolved	Revised to "U" (non-detect)
F3K080109			None
F3K110173	P-58-304.65* P-58-402.40*	Chromium	Revised to "U" (non-detect)
F3K140242			None
F3K210372			None
F3K280120			None
F3L050365			None
F3L090146			None
F3L120339			None

Table 3-2. *Evaluation of Laboratory Method Blanks*			
Package Identification	***Sample ID***	***Analyte***	***Action***
F3L160348			None
F4A130259			None
F4A150320			None
F4A230292			None
F4A300327			None
F4B110140			None
F4B130279			None
F4B170134			None
F4B200226			None

* - Also qualified due to other types of blank contamination

3.2.11. Laboratory Control Sample Results

The laboratory analyzed an LCS for each QC batch. The percent recoveries were within laboratory control limits for all QC batches.

3.2.12. Matrix Spike Analyses

Matrix Spike (MS) or MS/MSD samples were submitted to the laboratory for analysis. The MS sample analysis is designed to provide information about the effects of a sample matrix on the sample preparation procedures and the measurement methodology. When the MS/MSD pair is performed, precision can also be measured. All percent recoveries (%R) and relative percent differences (RPD) were within criteria ($75 \leq \%R \leq 125$; RPD $\leq 20\%$) - no qualifications were required.

The laboratory performed an MS and Matrix Duplicate (MS/MD) pair for the first SDG (F3C190235), see Section 3.2.13. For all subsequent SDGs, the laboratory performed MS/MSD pairs, when performed. Both techniques offered similar QC indicators of accuracy and precision with respect to the sample matrices. Table 1-1 specified what technique was performed, and on which samples.

For the following, matrix effect of the samples for accuracy and precision was not evaluated:

- For SDGs F3E160130, F3E200165, F3F050171, F3G230216, F3H010243, F3I050189, and F3I250196, MS/MSDs were performed only on samples from other clients of the laboratory.

- For SDGs F3E230179, SDG F3F270132, F3G010309, F3G030162, F3H060192, F3H180106, and F3K210372, no MS/MSDs were performed.

- For SDG F3F260187, the laboratory performed MS/MSD on the field blank sample; MS/MSD should never be performed on field blank samples, as they offer no information on matrix effects of the actual field samples.

- For SDGs F3H220246 F3H270230, F3J240204, and F4A130259, the laboratory performed MS/MSDs on the equipment blank samples; MS/MSD should never be performed on equipment blank samples, as they offer virtually no information on matrix effects of the actual field samples.

Of the 1,123 samples submitted to the laboratory, 82 of them were also analyzed for MS/MSD. This represented a rate of 7.2 percent which exceeds the QAPP's minimum required rate of 5 percent.

3.2.13. Matrix Duplicate Analyses

One matrix duplicate (MD) sample was analyzed by the laboratory. The MD sample was analyzed in conjunction with the MS sample in place of the MS/MSD pair (see Section 3.2.12). The objective of the duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. An evaluation of the precision of the laboratory analysis procedure was made based on RPDs calculated for the original and duplicate sample results. Calculations were made only when both results were above the laboratory reporting limits. All MD RPDs were within the criterion of ≤ 20% - no qualifications were required.

3.2.14. Field Duplicate Analyses

Seventy-four project samples were submitted as blind field duplicates. This represents 95 duplicate data points. By design, the laboratory was never made aware of which field samples the blind field duplicates were associated with. An evaluation of the precision of the field sampling procedure (as well as the laboratory analysis procedure) was made based on RPD calculated for the original and duplicate sample results. Blind field duplicate samples were collected and analyzed to assess the overall sampling and analytical precision. Evaluation calculations were made only when both results were above the laboratory reporting limits. The RPD values for most duplicates were within the criterion of ≤ 30%.

- For SDG F3G290207, the RPD for the duplicate set (P-42-329.8 and P-42-DUP-2) was 83.6%. Since the sample results were less than 5 times
- (5X) the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F3I050189, the RPD for the duplicate set (P-46-409.34 and P-46-DUP-3) was 42.8%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F3J290103, the RPD for the duplicate set (P-49-340.8 and P-49-DUP-2) was 38.6%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F3K140242, the RPD for the duplicate set (P-52-364.2 and P-52-DUP-2) for total nickel was 61.3%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F3L120339, the RPD for the duplicate set (P-33-304.6 and P-33-DUP-2) for total nickel was 83.7%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F4B170134, the RPD for the duplicate set (P-32-359.25 and P-32-DUP-2) for dissolved nickel was 53.0%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F4B200226, the RPD for the duplicate set (P-32-488.9 and P-32-DUP-3) for total nickel was 35.1%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

It should be noted that QAPP requirements (GTEOSI, 2002) specified that a field duplicate sample be collected at a rate of one sample for every ten samples (collection rate of 10%). One-hundred-twenty-six (126) field duplicates data points were required to be collected for the project since a total of 1,255[13] project samples were submitted (not including other field QC samples collected) for analysis. The actual collection rate performed was equivalent to 7.6 percent[14]. Since an adequate number of field duplicate samples were not collected, the precision objective for the project was not in compliance. Table 3-3 shows the evaluation of field duplicate samples submitted.

Table 3-3. *Evaluation of Field Duplicate Samples*

Package Identification	***Sample ID***	***Analytes***	***Action***
F3C190235	MW-3		None
F3E090278	P-27-99.75		None
F3F030298	P-15-218.00		None
	P-D-217.1		None
F3F050171	P-D-321.95		None
F3F120220	P-C-99.6		None
F3F170126	P-C-320.3		None
F3F200145	P-24-167.3		None
	P-24-287.3		None
F3F260187	P-23-180.1		None
F3G030162	P-23A-347.6		None
F3G110256	P-25-179.7		None
	P-35-177.2		None
F3G150156	P-25-275.8		None
	P-35-332.2		None
F3G250374	P-H-126.8		None
	P-42-202.7		None
	P-H-206.55		None

[13] This number represents 1,350 (non-field blank/equipment blank) total data points minus 95 duplicate sample data points.
[14] Value = (95 duplicate data / 1,255 discrete sample data) X 100.

Table 3-3. *Evaluation of Field Duplicate Samples*

Package Identification	***Sample ID***	***Analytes***	***Action***
F3G290207	P-42-329.8 P-42-DUP-2	Nickel	"J" (RPD > 30%)
F3H060192	P-45-81.25		None
F3H080219	P-20-169.60		None
F3H130195	P-20-427.99		None
F3H180106	P-45-366.39		None
F3H220246	P-36-15.7		None
	P-46-139.60		None
F3H270230	P-46-275.42		None
	P-37-304.8		None
F3I040177	P-44-99.3		None
F3I050189	P-46-409.34 P-46-DUP-3	Nickel	"J" (RPD > 30%)
F3I090305	P-44-239.85		None
	P-44-339.8		None
	P-47-163.9		None
	P-47-187.0		None
F3I120107	P-43-119.88		None
	P-47-317.0		None
F3I180259	P-29-109.5		None
	P-38-116.7		None
F3I230231	P29-329.85		None
	P-38-322.9		None
	P-43-246.68		None
F3I250196	P-38-381.3		None
F3J030259	P-30-204.55	Nickel Dissolved	None
	P-30-204.55	Nickel Total	None
F3J070236	P-30A-298.6	Nickel Dissolved	None
	P-30A-298.6	Nickel Total	None
	P-18-156.65	Nickel Dissolved	None
	P-18-156.65	Nickel Total	None
F3J110172	P-30A-406.55	Nickel Dissolved	None
	P-30A-406.55	Nickel Total	None
	P-18-247.65	Nickel Dissolved	None
	P-18-247.65	Nickel Total	None

Table 3-3. *Evaluation of Field Duplicate Samples*

Package Identification	***Sample ID***	***Analytes***	***Action***
F3J240204	P-50-129.90	Nickel Dissolved	None
	P-49-167.3	Nickel Dissolved	None
	P-51-97.78	Nickel Dissolved	None
F3J290103	P-50-342.60	Nickel Total	None
	P-50-342.60	Nickel Dissolved	None
	P-49-340.8 P-49-DUP-2	Nickel Dissolved	"J" (RPD > 30%)
	P-51-246.75	Nickel Dissolved	None
F3K080109	P-54-137.55	Nickel Total	None
	P-54-137.55	Nickel Dissolved	None
	P-52-170.0	Nickel Total	None
	P-52-170.0	Nickel Dissolved	None
	P-58-159.65	Nickel Dissolved	None
F3K110173	P-58-274.65	Nickel Total	None
	P-58-274.65	Nickel Dissolved	None
	P-54-267.95	Nickel Dissolved	None
F3K140242	P-54-351.25	Nickel Total	None
	P-52-364.2 P-52-DUP-2	Nickel Total	"J" (RPD > 30%)
	P-52-364.2	Nickel Dissolved	None
F3K280120	P-53-146.40	Nickel Total	None
	P-53-146.40	Nickel Dissolved	None
	P-53-266.35	Nickel Dissolved	None
	P-34-139.55	Nickel Total	None
	P-34-139.55	Nickel Dissolved	None
	P-34-244.55	Nickel Total	None
	P-34-244.55	Nickel Dissolved	None
F3L090146	P-33-169.6 P-33-DUP-1	Nickel Dissolved	"J" (RPD > 30%)
F3L120339	P-33-304.6 P-33-DUP-2	Nickel Total	"J" (RPD > 30%)
	P-33-304.6	Nickel Dissolved	None
F4A130259	P-31-190.40	Nickel Dissolved	None
	P-55-154.55	Nickel Dissolved	None
F4B150320	P-31-284.25	Nickel Dissolved	None
F4A230292	P-56-86.55	Nickel Total	None
	P-56-86.55	Nickel Dissolved	None

Table 3-3. *Evaluation of Field Duplicate Samples*

Package Identification	***Sample ID***	***Analytes***	***Action***
F4A300327	P-55-311.95	Nickel Total	None
	P-55-311.95	Nickel Dissolved	None
F4B130279	P-32-174.35	Nickel Dissolved	None
F4B170134	P-32-359.25	Nickel Dissolved	"J" (RPD > 30%)
F4B200226	P-32-488.9	Nickel Total	"J" (RPD > 30%)
	P-32-488.9	Nickel Dissolved	None

3.2.15. Field Blanks and Equipment Blanks

A total of 9 field blanks and 40 equipment blank data points were performed as part of the samples submitted for this data validation report. Although this limited number of blanks was in compliance with the QAPP, it was slightly insufficient to fully evaluate field contaminations (false positives). A more appropriate frequency of blank collections should have been at a 5 percent rate or each time the sampling equipment was cleaned. Based on the 5 percent rate, 63[15] field blanks and/or equipment blank data points should been performed. The actual rate performed is 3.9 percent[16].

If an analyte was detected in the field blank or equipment blank, the associated field sample results were revised to non-detect if they were less than 10 times the blank result (when blank result > PQL), or to non-detect at the PQL value (when blank result < PQL). A summary of the samples and analytes that were revised due to field sampling contamination are presented in Table 3-4.

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3F260187	P-23-80.1* P-23-90.1* P-23-100.1* P-23-110.1* P-23-130.1* P-23-140.1* P-23-150.1* P-23-170.1* P-23-180.1* P-23-DUP-1*	Nickel	Revised to "U" (non-detect)

[15] Value = (1,350 (non-field blank/equipment blank) total data points minus 95 duplicate sample data points) X 0.05.
[16] Value = 49 / (1,350 (non-field blank/equipment blank) total data points minus 95 duplicate sample data points) X 100.

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3G110256	P-25-79.7* P-25-89.7* P-25-99.1* P-25-139.7* P-25-149.7* P-25-159.7* P-25-169.7* P-25-179.7* P-25-189.7* P-25-199.7* P-25-209.7* P-25-219.7* P-25-DUP-1* P-35-77.2* P-35-87.2* P-35-137.2* P-35-147.2* P-35-157.2* P-35-167.2* P-35-177.2* P-35-DUP-1*	Nickel	Revised to "U" (non-detect)
F3G030162	P-23A-DUP.1* P-23A-347.6*	Nickel	Revised to "U" (non-detect)
F3G230216	P-H-76.8* P-H-86.8* P-H-106.8* P-H-116.8*	Nickel	Revised to "U" (non-detect)
F3G250374	P-H-126.8* P-H-DUP1* P-H-136.8* P-H-146.8* P-H-156.8* P-H-166.8* P-H-176.8* P-H-186.8* P-42-189.6* P-42-197.7* P-42-202.7* P-42-DUP-1* P-42-99.6* P-42-109.6* P-42-139.6* P-42-149.6* P-42-159.6* P-42-169.4*	Nickel	Revised to "U" (non-detect)
F3G290207	P-H-226.55*	Nickel	Revised to "U" (non-detect)
F3H130195	P-20-359.60* P-20-379.60* P-20-369.60*	Nickel	Revised to "U" (non-detect)

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3H210288	P-36-76.7 P-36-86.7 P-36-96.7 P-36-106.7 P-36-116.7 P-36-126.7 P-36-136.7 P-46-79.60 P-46-89.60 P-46-99.60 P-46-109.60 P-46-119.60 P-46-129.60 P-37-79.3 P-37-89.95 P-37-99.95 P-37-109.95 P-37-119.95 P-37-129.95 P-37-139.95 P-37-149.95 P-37-DUP 1	Nickel	Revised to "U" (non-detect)
F3H220246	P-36-146.7 P-36-186.7 P-36-206.7 P-37-159.95 P-37-179.95 P-37-189.95	Nickel	Revised to "U" (non-detect)
F3H270230	P-36A-266.8 P-36A-282.0 P-36-236.7 P-36A-371.75 P-36A-328.4 P-37-314.8	Nickel	Revised to "U" (non-detect)
F3I230231	P-29-278.4* P-29-289.85* P-29-299.85* P-29-310.2* P-29-318.9* P-29-329.85* P-29-DUP-2* P-29-339.5* P-29-360.0* P-29-369.2* P-38-166.3* P-38-176.3* P-38-186.3* P-38-216.3* P-38-226.3* P-38-312.9* P-38-322.9* P-38-DUP-2* P-38-332.3* P-38-341.1* P-43-264.85* P-43-274.85* P-43-284.85* P-43-294.85 P-43-304.85	Nickel	Revised to "U" (non-detect)

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3J070236	P-18-76.65* P-18-86.65* P-18-96.65* P-18-106.65* P-18-116.65* P-18-126.65* P-18-136.65* P-18-146.65* P-18-156.65* P-18-DUP-1* P-18-166.65* P-18-176.65* P-18-186.65*	Nickel Dissolved	Revised to "U" (non-detect)
	P-18-76.65* P-18-96.65* P-18-106.65* P-18-126.65* P-18-136.65* P-18-156.65* P-18-DUP-1* P-18-186.65*	Nickel Total	Revised to "U" (non-detect)
F3K080109	P-54-117.55 * P-54-127.55 * P-54-137.55 * P-54-DUP-1 * P-54-147.55 * P-54-155.75 * P-54-165.85 * P-52-80.0 * P-52-90.0 * P-52-100.0 * P-52-130.0 * P-52-140.0 * P-58-79.65 *	Nickel Total	Revised to "U" (non-detect)
	P-54-97.55 P-54-127.55 P-54-137.55 P-54-155.75 P-54-165.85 P-52-80.0 * P-52-90.0 * P-52-100.0 * P-52-110.0 * P-52-120.0 * P-52-130.0 * P-52-140.0 * P-58-79.65 * P-58-89.65 * P-58-99.65 * P-58-109.65 * P-58-119.65 * P-58-189.65 *	Nickel Dissolved	Revised to "U" (non-detect)
F3K210372	P-53-86.40 P-53-76.40	Nickel Total	Revised to "U" (non-detect)

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3K210372 Cont'd	P-52-404.45* P-52-483.38* P-54-421.00* P-54-431.00* P-54-437.05* P-53-86.40* P-53-76.40*	Nickel Dissolved	Revised to "U" (non-detect)
F3K280120	P-53-96.40 P-53-106.40 P-53-116.40 P-53-146.40 P-53-DUP-1 P-53-165.70 P-53-188.85 P-53-212.60 P-34-79.55 P-34-89.55 P-34-99.55 P-34-129.55 P-34-139.55 P-34-DUP-1 P-34-164.55 P-34-154.55 P-34-184.55 P-34-194.55 P-34-204.55 P-34-214.55 P-34-224.55 P-34-234.55 P-34-244.55 P-34-DUP-2 P-34-254.55 P-34-264.55 P-34-304.50 P-53-340.05	Nickel Total	Revised to "U" (non-detect)
F4A130259	P-55-94.55* P-55-114.55* P-55-144.55*	Nickel Total	Revised to "U" (non-detect)
	P-31-79.25* P-31-89.25* P-31-111.67* P-31-124.25* P-31-134.25* P-31-190.40* P-31-DUP-1* P-31-223.75* P-31-233.11* P-31-263.70* P-55-94.55* P-55-104.55* P-55-114.55* P-55-DUP-1* P-55-124.55* P-55-134.55* P-55-144.55* P-55-154.55* P-55-164.55*	Nickel Dissolved	Revised to "U" (non-detect)
F4A230292	P-31-404.25* P-56-116.55*	Nickel Total	Revised to "U" (non-detect)

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F4A230292 Cont'd	P-31-404.25* P-56-96.55* P-56-106.55* P-56-116.55* P-56-126.55* P-56-146.55* P-56-156.55* P-56-186.55* P-56-194.40* P-31-414.25*	Nickel Dissolved	Revised to "U" (non-detect)
F4A300327	P-55-311.95* P-55-DUP-2* P-55-334.55* P-55-340.35* P-56-388.60*	Nickel Total	Revised to "U" (non-detect)
	P-55-304.45* P-55-311.95* P-55-DUP-2* P-55-334.55* P-55-340.35* P-55-374.35* P-56-388.60* P-56-211.45* P-56-221.45* P-56-241.45* P-56-251.45* P-56-316.45*	Nickel Dissolved	Revised to "U" (non-detect)

* - Also qualified due to other types of blank contamination

3.2.16. Quantitation of Results

The laboratory reporting limits for the metals were in accordance with the NYSDEC requirements (i.e., reporting at the Practical Quantitation Limits specified in the QAPP). The laboratory reported estimated data below the laboratory reporting limit but above the laboratory MDL, and qualified the estimated data with a "B" qualifier. The validation process revised the "B" qualifier to a "J" qualifier to provide consistency for others in review of the validated database.

3.2.17. Electronic Data Deliverables

The results in electronic database, for most samples, matched results listed on the hardcopy analytical report including laboratory qualifiers. Since the electronic deliverables were received in Microsoft Access database formats and were subsequently transferred to Microsoft Excel spreadsheet tables for presentation, it was not determined where the error was. However, all discrepancies have been corrected for the data tables in the Groundwater Investigation Report and the Access database. The qualifiers and results were revised based on quality control issues, and foundation for changes are listed in previous sections of this DUSR. The qualifiers were also placed onto the hardcopy reporting forms located near the beginning of each deliverable package (i.e., SDG package).

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 99.7 percent[17] of the metal data were determined to be usable. However, those sample results qualified as estimated, "J" and "UJ," due to data validation QC exceedances should be considered conditionally usable for qualitative and quantitative purposes.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, in the data validation guidelines listed in Section 1.2, in the QAPP (GTEOSI, 2002) established for this project, and by professional judgment. Major deficiencies in the data generation process have resulted in the rejection of four hexavalent chromium data points, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration of the analyte, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PSARCC) parameters. Completeness has been discussed above.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. For the metals analyses, none of the data were rejected due to precision non-conformances. However, the frequency of duplicate sample collection was insufficient, and therefore, evaluation of this criteria may not be adequate.

LCS, MS, and MSD recoveries indicate the accuracy of the data. For the metals analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte quantification are indicators of the representativeness of the analytical data. Four of the hexavalent chromium data were rejected due to representativeness non-conformances.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. None of the metals data were rejected due to sensitivity non-conformances.

[17] Value = ((1,399 all data points – 4 unusable data points) / 1,399 all data points) X 100.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets Site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

   The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met with the exception of some missing forms as discussed in Sections 3.2.1 and 3.2.5. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. *Have all holding times been met?*

   The holding times were met for all with the exception of four analyses for hexavalent chromium. These results were qualified as unusable.

3. *Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?*

   The laboratory used laboratory control limits. QA/QC deviations and qualifications performed on the sample data are discussed in Chapter 3. With the exception of holding-time for four hexavalent chromium samples, major non-conformances were not detected for the data. However, the low frequency of replicate (duplicate) analyses was not in compliance with the QAPP.

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

   The QAPP required that USEPA guidance methods be used in the analysis of the samples. The laboratory used the required method protocols for the analyses performed for this sampling event, which met data user and client needs.

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

   The evaluation of selected raw data confirmed all information provided in the data packages with the exception of some minor discrepancies as discussed in Section 3.2.5. These discrepancies were corrected.

6. *Have the correct data qualifiers been used?*

   The laboratory applied the correct qualifiers to the sample data. The laboratory qualifiers were revised and/or new qualifiers applied as required by the validation guidelines listed in Section 1. The validation guideline qualifier definitions are listed in Section 2.2.

References

New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.

United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* 540-R-01-008. July 2002.

United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.

URS Corporation. *GTE Operations Support Incorporated - Groundwater Investigation Work Plan, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* QAPP: Appendix C. September 2002.

REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected at the former Sylvania Electric Products Incorporated facility in Hicksville, New York. This report is concerned with volatile samples collected by Malcolm Pirnie, Inc. (MPI) from March 15, 2003 through February 19, 2004.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for Volatile Organic Compound (VOC) analysis using United States Environmental Protection Agency (USEPA) guidance methods. A total of 403 samples[1] were submitted, which resulted in 14,939 VOC results[2]. Of this number, 11,529 of them are actual sample results[3] and the remainders are field quality assurance/quality control (QA/QC) indicators[4] of the samples. The analytical data generated for this investigation were evaluated by MPI using the QA/QC criteria established in the methods and USEPA guidelines. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.
- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.
- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Organic Data Review.* EPA 540-R-99-008. October 1999.
- United States Environmental Protection Agency, Region 2. *Contract Laboratory Program* Organics *Data Review.* SOP No. HW-6, Revision #12. March 2001.
- United States Environmental Protection Agency, Region 2. *Standard Operating Procedure for the Validation of Organic Data Acquired Using SW-846 Method 8260B.* SOP No. HW-24, Revision #1. June 1999.

In circumstances where the quality of the data or the accuracy of the results is suspect, the project's Quality Assurance Project Plan (QAPP) and professional judgment[5] were also used to determine if results should be qualified as estimated ("J" or "UJ"). Since the individual guidance documents used (as a source of reference for the validation) may differ slightly in the type of qualification applied to data, MPI applied qualifiers generally with an err to caution (conservstive). Method non-conformances included exceedances of the relative percent standard deviation for the initial calibrations, the percent differences of the continuing calibrations, the excessively low response factors in both the initial and continuing calibrations, and the percent recoveries of the laboratory control samples. Results rejected were due to initial and continuing calibration response factor non-conformances, VOA vial headspace, and high sample storage temperature.

[1] Total number of samples includes field samples, field duplicates, trip blanks, field blanks, and equipment blanks.
[2] Total number of results includes 14,911 results for targeted compounds and 28 results for tentatively identified compounds. This number includes some results, which were rejected.
[3] This is the total number of results minus trip blank, field blank, and equipment blank results.
[4] These indicators do not include Matrix Spike/Matrix Spike Duplicate or other internal laboratory QA/QC indicators.
[5] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

Additionally, most laboratory method blanks contained low level contamination from common laboratory contaminants, including acetone and methylene chloride. The presence of these contaminants affected many project samples. Qualification of associated results was performed to show the relationship between the laboratory contamination and the uncertainty of the final sample result. Similarly, the project trip blanks, field blanks, and equipment blanks contained low-levels of the same contaminants as were seen in the laboratory method blanks, in addition to other contaminants due to cross-contamination during field sampling activities. Again, MPI qualified the affected data to show the potential impact on the final sample results.

Other quality issues requiring data validation qualification included replacement of results which exceeded the laboratory calibration range (i.e., qualified with an "E" by the laboratory) with re-analysis results, and qualification of all tentatively identified compounds (TIC). TIC results are qualitative only, and not considered usable for quantitative assessments, in particular risk screening evaluations.

Overall, 92.0 percent[6] of the VOC results retained in the database as final data were determined to be usable for qualitative and quantitative purposes. The other 8.0 percent were qualified as unusable, "R," – the presence or absence of the compounds cannot be verified. Sample results qualified as estimated, "J" and "UJ," due to quality control (QC) exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the QAPP, was met for the volatiles in groundwater database.

[6] Value = (14,911 total target compound list data points – 1,192 rejected TCL data points) / 14,911 X 100

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples collected at the former Sylvania Electric Products Incorporated facility in Hicksville, New York (the Site). This report pertains to volatile samples collected by Malcolm Pirnie, Inc. (MPI) from March 15, 2003 through February 19, 2004.

The sample delivery group (SDG) number (laboratory package identification number), field identification, and laboratory identification of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3C190235	TB-A	F3C190235001	VOCs
	TB-B	F3C190235002	VOCs
	MW-7	F3C190235003	VOCs
	MW-2	F3C190235004	VOCs
	MW-1	F3C190235005	VOCs
	MW-11	F3C190235006	VOCs
	MW-12	F3C190235007	VOCs
	MW-5	F3C190235008	VOCs
	MW-10 (also MS/MSD)	F3C190235009	VOCs
	MW-9	F3C190235010	VOCs
	MW-6 (also MS/MSD)	F3C190235011	VOCs
	MW-3	F3C190235012	VOCs
	MW-4	F3C190235013	VOCs
	MW-8	F3C190235014	VOCs
	FB	F3C190235015	VOCs
	MW-DUP (MW-3)	F3C190235016	VOCs
F3D290160	P-17-73.25	F3D290160001	VOCs
	P-17-92.25	F3D290160003	VOCs
	P-17-223.1	F3D290160005	VOCs
	P-FB-1	F3D290160006	VOCs
	P-F-86.48	F3D290160007	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3D290160 Cont'd	TB-1	F3D290160008	VOCs
	P-F-76.46	F3D290160009	VOCs
F3E060217	P-27-89.75	F3E060217001	VOCs
	P-27-DUP (P-27-99.75)	F3E060217002	VOCs
	P-27-99.75	F3E060217003	VOCs
	P-27-139.75	F3E060217004	VOCs
	P-27-199.75 (also MS/MSD)	F3E060217005	VOCs
	P-28-87.02	F3E060217006	VOCs
	P-28-97.02	F3E060217007	VOCs
	P-28-147.02	F3E060217008	VOCs
	P-28-207.02	F3E060217009	VOCs
	TB-2	F3E060217010	VOCs
F3E160130	P-26-231.25 (also MS/MSD)	F3E160130009	VOCs
	P-26-241.25	F3E160130010	VOCs
	P-E-78.57	F3E160130011	VOCs
	P-E-88.57	F3E160130012	VOCs
	P-E-98.57	F3E160130013	VOCs
	TRIP BLANK	F3E160130014	VOCs
F3E200165	P-26-257.2	F3E200165001	VOCs
	P-26-267.2	F3E200165002	VOCs
	P-26A-276.53	F3E200165003	VOCs
	P-26A-286.5	F3E200165004	VOCs
	P-26A-295.85	F3E200165005	VOCs
	TRIP BLANK	F3E200165006	VOCs
	P-E-128.57	F3E200165010	VOCs
	P-E-138.57	F3E200165011	VOCs
	P-E-148.57	F3E200165012	VOCs
	P-E-158.57	F3E200165013	VOCs
F3E230179	P-E-292.28	F3E230179003	VOCs
	P-E-301.23	F3E230179004	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3E230179 Cont'd	P-E-332.85	F3E230179006	VOCs
	P-E-327.15	F3E230179007	VOCs
	TB-051903B	F3E230179008	VOCs
F3E290170	P-D-87.05	F3E290170002	VOCs
	1EB-5/27	F3E290170003	VOCs
	P-D-97.05	F3E290170004	VOCs
	P-D-107.05 (also MS/MSD)	F3E290170005	VOCs
	TB-05-28-03	F3E290170010	VOCs
	P-15-79.65	F3E290170011	VOCs
	P-15-89.65	F3E290170012	VOCs
	P-15-99.65	F3E290170013	VOCs
	P-15-109.65	F3E290170014	VOCs
	P-15-119.65	F3E290170015	VOCs
F3F030298	P-15-179.65	F3F030298006	VOCs
	P-D-257.	F3F030298022	VOCs
	P-D-290.1	F3F030298023	VOCs
	P-D-77.05	F3F030298024	VOCs
	P-D-117.05	F3F030298025	VOCs
	P-D-127.05	F3F030298026	VOCs
	P-D-137.05	F3F030298027	VOCs
	P-D-147.05	F3F030298028	VOCs
	TB-06-02-03	F3F030298037	VOCs
F3F120220	P-C-89.6	F3F120220002	VOCs
	P-C-99.6	F3F120220003	VOCs
	P-C-DUP-1 (P-C-99.6)	F3F120220012	VOCs
	TRIP BLANK	F3F120220013	VOCs
F3F170126	P-C-320.3	F3F170126003	VOCs
	P-C-330.3	F3F170126004	VOCs
	P-C-337.5	F3F170126005	VOCs
	P-24-87.35	F3F170126006	VOCs
	P-24-77.35	F3F170126007	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3F170126 Cont'd	TB-612-616	F3F170126008	VOCs
	P-C-FB	F3F170126009	VOCs
	P-C-159.6	F3F170126010	VOCs
	P-C-169.6 (also MS/MSD)	F3F170126011	VOCs
F3F180192	TB-617	F3F180192001	VOCs
	P-24-127.3	F3F180192005	VOCs
	P-24-137.3	F3F180192006	VOCs
	P-C-347.7 (also MS/MSD)	F3F180192008	VOCs
F3F200145	P-24-157.3	F3F200145001	VOCs
	P-24-167.3	F3F200145002	VOCs
	P-24-177.3	F3F200145003	VOCs
	P-24-187.3	F3F200145004	VOCs
	P-24-197.3	F3F200145005	VOCs
	P-24-207.3	F3F200145006	VOCs
	P-24-217.3	F3F200145007	VOCs
	P-24-DUP-1 (P-24-167.3) (also MS/MSD)	F3F200145008	VOCs
	P-24-227.3	F3F200145009	VOCs
	P-24-237.3	F3F200145010	VOCs
	P-24-247.3	F3F200145011	VOCs
	P-24-257.3	F3F200145012	VOCs
	TB-619	F3F200145013	VOCs
	P-24-147.3	F3F200145014	VOCs
	P-24-267.3 (also MS/MSD)	F3F200145015	VOCs
	P-24-277.3	F3F200145016	VOCs
	P-24-287.3	F3F200145017	VOCs
	P-24-DUP-2 (P-24-287.3)	F3F200145018	VOCs
	P-C-364.5	F3F200145019	VOCs
	P-C-374.5	F3F200145020	VOCs
	P-C-394.5	F3F200145021	VOCs
	P-C-384.5	F3F200145022	VOCs
F3F260187	P-24-297.3	F3F260187001	VOCs
	P-23-FB-1	F3F260187002	VOCs
	P-23-180.1	F3F260187013	VOCs
	P-23-DUP-1 (P-23-180.1)	F3F260187014	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3F260187 Cont'd	TB-619625	F3F260187015	VOCs
F3F270132	TB-625626	F3F270132001	VOCs
	P-23-150.1	F3F270132007	VOCs
	P-23-160.1	F3F270132008	VOCs
F3G010309	P-23-239.8	F3G010309001	VOCs
	P-23-252.0	F3G010309002	VOCs
	P-23-262.0	F3G010309003	VOCs
	P-23A-286.96	F3G010309004	VOCs
	P-23A-293.50	F3G010309005	VOCs
	TB-627630	F3G010309006	VOCs
F3G030162	TB-701702	F3G030162001	VOCs
	P-23A-DUP-1 (P-23A-347.6)	F3G030162004	VOCs
	P-23A-347.6	F3G030162005	VOCs
F3G110205	P-25-EB-1	F3G110205001	VOCs
	P-25-169.7	F3G110205011	VOCs
	P-25-179.7	F3G110205012	VOCs
	P-25-DUP-1 (P-25-179.7)	F3G110205017	VOCs
	P-35-EB-1	F3G110205018	VOCs
	P-35-117.2	F3G110205023	VOCs
	P-35-177.2	F3G110205029	VOCs
	P-35-DUP-1 (P-35-177.2)	F3G110205030	VOCs
	TB-708710	F3G110205031	VOCs
F3G150156	P-25-275.8	F3G150156006	VOCs
	P-25-DUP-2 (P-25-275.8)	F3G150156007	VOCs
	P-25-349.4	F3G150156014	VOCs
	P-35-EB-2	F3G150156027	VOCs
	P-35-332.2	F3G150156030	VOCs
	P-35-DUP-2 (P-35-332.2)	F3G150156031	VOCs
	TB-710714	F3G150156032	VOCs
F3G230216	P-H-EB-1	F3G230216001	VOCs
	P-H-116.8	F3G230216006	VOCs
	TB721722	F3G230216007	VOCs
	P-42-EB-1	F3G230216008	VOCs
F3G250374	P-H-106.8	F3G250374001	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3G250374	P-H-136.8	F3G250374004	VOCs
	P-H-146.8	F3G250374005	VOCs
	P-H-156.8	F3G250374006	VOCs
	P-H-EB-2	F3G250374011	VOCs
	P-H-206.55	F3G250374012	VOCs
	P-42-202.7	F3G250374016	VOCs
	P-42-DUP-1 (P-42-202.7)	F3G250374017	VOCs
	P-H-DUP-2 (P-H-206.55)	F3G250374019	VOCs
	TB-722724	F3G250374020	VOCs
F3G290207	P-H-351.65	F3G290207006	VOCs
	P-42-217.2	F3G290207011	VOCs
	P-42-276.4	F3G290207014	VOCs
	P-42-329.8	F3G290207019	VOCs
	P-42-DUP-2 (P-42-329.8)	F3G290207020	VOCs
	P-42-354.6	F3G290207022	VOCs
	TB-724728	F3G290207023	VOCs
F3H060192	P-20-149.60	F3H060192008	VOCs
	P-20-159.60	F3H060192009	VOCs
	P-20-EB-1	F3H060192010	VOCs
	P-45-81.25	F3H060192011	VOCs
	TB-804805	F3H060192013	VOCs
	P-45-131.25	F3H060192017	VOCs
	P-45-DUP-1 (P-45-81.25)	F3H060192018	VOCs
F3H080219	P-20-220.76	F3H080219006	VOCs
	P-20-229.70	F3H080219007	VOCs
	TB-805807	F3H080219008	VOCs
	P-45-151.25	F3H080219010	VOCs
	P-45-207.25	F3H080219015	VOCs
F3H130195	P-45-281.65	F3H130195001	VOCs
	P-20-309.60	F3H130195010	VOCs
	P-20-319.60	F3H130195011	VOCs
	P-20-FB	F3H130195019	VOCs
	TB-8-12	F3H130195020	VOCs
	P-20-427.99	F3H130195021	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3H130195 Cont'd	P-20-DUP-2 (P-20-427.99)	F3H130195022	VOCs
F3H180106	P-45-366.39	F3H180106001	VOCs
	P-45-DUP-2 (P-45-366.39)	F3H180106002	VOCs
	P-20-476.68	F3H180106005	VOCs
	TB-0813	F3H180106006	VOCs
F3H210288	P-36-EB-1	F3H210288001	VOCs
	P-37-119.95	F3H210288019	VOCs
	P-37-DUP-1 (P-37-119.95)	F3H210288023	VOCs
	TB-819820	F3H210288024	VOCs
F3H220246	P-36-156.7	F3H220246002	VOCs
	P-36-DUP-1 (P-36-156.7)	F3H220246003	VOCs
	P-46-139.60	F3H220246011	VOCs
	P-46-DUP-1 (P-46-139.60) (also MS/MSD)	F3H220246012	VOCs
	P-37-EB-1	F3H220246023	VOCs
	TB-820821	F3H220246024	VOCs
F3H270230	P-46-275.42	F3H270230003	VOCs
	P-46-DUP-2 (P-46-275.42)	F3H270230004	VOCs
	P-36A-282.0	F3H270230010	VOCs
	P-36-136.7	F3H270230016	VOCs
	P-37-284.4	F3H270230020	VOCs
	P-37-304.8	F3H270230021	VOCs
	P-37-DUP-2 (P-37-304.8)	F3H270230022	VOCs
	TB-821-824	F3H270230024	VOCs
F3I040177	EB-1-44	F3I040177001	VOCs
	EB-2-P-44	F3I040177002	VOCs
	P-44-99.3	F3I040177004	VOCs
	P-44-DUP-1 (P-44-99.3)	F3I040177005	VOCs
	TB-90203	F3I040177009	VOCs
F3I050189	P-44-149.8	F3I050189003	VOCs
	TB-903904	F3I050189016	VOCs
F3I090305	P-44-215.5	F3I090305007	VOCs
	P-44-229.2	F3I090305008	VOCs
	P-44-239.85	F3I090305009	VOCs
	P-44-249.85	F3I090305010	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3I090305 Cont'd	P-44-257.1	F3I090305011	VOCs
	P-44-EB-3	F3I090305015	VOCs
	P-47-DUP-1 (P-47-147.1)	F3I090305025	VOCs
	P-47-147.1	F3I090305026	VOCs
	P-47-177.0 (also MS/MSD)	F3I090305030	VOCs
	P-47-205.7	F3I090305034	VOCs
	TB-904908	F3I090305039	VOCs
F3I120107	P-43-EB-1	F3I120107001	VOCs
	P-43-119.88	F3I120107006	VOCs
	P-43-DUP-1 (P-43-119.88)	F3I120107007	VOCs
	P-44-339.8	F3I120107016	VOCs
	TB-908910	F3I120107017	VOCs
F3I150101	P-43-129.88	F3I150101004	VOCs
	P-47-197.0	F3I150101005	VOCs
	TB-906911	F3I150101006	VOCs
F3I180259	P-29-109.5	F3I180259005	VOCs
	P-29-DUP-1 (P-29-109.5)	F3I180259006	VOCs
	TB-916917	F3I180259012	VOCs
	P-38-FB-1	F3I180259020	VOCs
	P-38-116.7	F3I180259027	VOCs
	P-38-DUP-1 (P-38-116.7)	F3I180259028	VOCs
	P-38-146.7	F3I180259031	VOCs
F3I230231	P-29-EB-1	F3I230231003	VOCs
	P-29-310.2	F3I230231014	VOCs
	P-29-329.85	F3I230231016	VOCs
	P-29-DUP-2 (P-29-329.85)	F3I230231017	VOCs
	P-29-EB-2	F3I230231019	VOCs
	P-29-360.0	F3I230231020	VOCs
	P-38-186.3	F3I230231024	VOCs
	P-38-207.5	F3I230231025	VOCs
	P-38-216.3	F3I230231026	VOCs
	P-38-260.7	F3I230231028	VOCs
	P-43-246.68	F3I230231035	VOCs
	P-43-DUP-2 (P-43-246.68)	F3I230231036	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3I230231 Cont'd	P-43-294.85	F3I230231041	VOCs
	TB-917922	F3I230231043	VOCs
	P-29-390.0	F3I230231044	VOCs
F3I250196	P-38-FB-2	F3I250196004	VOCs
	P-38-DUP-3 (P-38-381.3)	F3I250196005	VOCs
	TB-923924	F3I250196007	VOCs
F3J030259	P-30-89.50	F3J030259002	VOCs
	P-30-99.50	F3J030259003	VOCs
	P-30-204.55	F3J030259011	VOCs
	P-30-DUP-1 (P-30-204.55)	F3J030259013	VOCs
	TB1-930102	F3J030259015	VOCs
F3J070236	P-30A-298.6	F3J070236029	VOCs
	P-30A-DUP-2 (P-30A-298.6)	F3J070236030	VOCs
	P-18-EB-1	F3J070236033	VOCs
	P-18-156.65	F3J070236040	VOCs
	P-18-DUP-1 (P-18-156.65)	F3J070236041	VOCs
	TB-102106	F3J070236043	VOCs
F3J110172	P-30A-406.55	F3J110172020	VOCs
	P-30A-DUP-3 (P-30A-406.55)	F3J110172021	VOCs
	P-18-217.65	F3J110172023	VOCs
	P-18-247.65	F3J110172026	VOCs
	P-18-DUP-2 (P-18-247.65)	F3J110172027	VOCs
	P-18-257.65	F3J110172028	VOCs
	P-18-267.65	F3J110172029	VOCs
	P-18-277.65	F3J110172030	VOCs
	P-18-287.65	F3J110172031	VOCs
	P-18-302.66	F3J110172032	VOCs
	TB-106109	F3J110172033	VOCs
	P-18-335.80	F3J110172034	VOCs
F3J240204	P-50-109.90	F3J240204006	VOCs
	P-50-119.90	F3J240204007	VOCs
	P-50-129.90	F3J240204008	VOCs
	P-50-DUP-1 (P-50-129.90)	F3J240204009	VOCs
	P-50-139.90	F3J240204010	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F2J240204 Cont'd	P-50-149.90	F3J240204011	VOCs
	P-49-114.3 (also MS/MSD)	F3J240204020	VOCs
	P-49-124.3	F3J240204021	VOCs
	P-49-167.3	F3J240204024	VOCs
	P-49-DUP-1 (P-49-167.3)	F3J240204025	VOCs
	TB10211023	F3J240204027	VOCs
	P-51-117.78	F3J240204034	VOCs
	P-51-127.78	F3J240204035	VOCs
	P-49-EB-1	F3J240204040	VOCs
F3J290103	P-50-249.90	F3J290103003	VOCs
	P-50-267.44	F3J290103005	VOCs
	P-50-309.90	F3J290103009	VOCs
	P-50-EB-2	F3J290103012	VOCs
	P-50-342.60	F3J290103013	VOCs
	P-50-DUP-2 (P-50-342.60)	F3J290103014	VOCs
	TB-10231027	F3J290103019	VOCs
	P-49-269.3	F3J290103026	VOCs
	P-49-284.3	F3J290103027	VOCs
	P-49-340.8	F3J290103031	VOCs
	P-49-DUP-2 (P-49-340.8)	F3J290103032	VOCs
	P-51-187.78	F3J290103033	VOCs
	P-51-DUP-2 (P-51-246.75)	F3J290103037	VOCs
	P-51-246.75	F3J290103038	VOCs
F3J310287	P-51-301.12	F3J310287008	VOCs
	P-51-321.00	F3J310287009	VOCs
	P-51-327.85	F3J310287010	VOCs
	TB-10271030	F3J310287016	VOCs
F3K080109	P-54-107.55	F3K080109004	VOCs
	P-52-EB-1	F3K080109014	VOCs
	P-52-170.0	F3K080109024	VOCs
	P-52-DUP-1 (P-52-170.0)	F3K080109025	VOCs
	P-58-EB-1	F3K080109027	VOCs
	P-58-159.65	F3K080109036	VOCs
	P-58-DUP-1 (P-58-159.65)	F3K080109037	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3K080109 Cont'd	TB-114116	F3K080109044	VOCs
F3K110173	P-58-274.65	F3K110173001	VOCs
	P-58-DUP-2 (P-58-274.65)	F3K110173002	VOCs
	P-54-267.95	F3K110173017	VOCs
	P-54-DUP-2 (P-54-267.95)	F3K110173018	VOCs
	P-54-276.4	F3K110173019	VOCs
	TB-1171110	F3K110173031	VOCs
F3K140242	P-54-351.25	F3K140242005	VOCs
	P-54-DUP-3 (P-54-351.25)	F3K140242006	VOCs
	TB-11101113	F3K140242009	VOCs
F3K210372	P-52-EB-2	F3K210372005	VOCs
	TB-11171120	F3K210372006	VOCs
	EB-P-54-11-17	F3K210372007	VOCs
	P-53-EB-11-20	F3K210372012	VOCs
F3K280120	P-53-146.40	F3K280120006	VOCs
	P-53-DUP-1 (P-53-146.40)	F3K280120007	VOCs
	P-53-266.35 (also MS/MSD)	F3K280120018	VOCs
	P-53-DUP-2 (P-53-266.35)	F3K280120019	VOCs
	P-34-EB-1	F3K280120025	VOCs
	P-34-139.55	F3K280120032	VOCs
	P-34-DUP-1 (P-34-139.55)	F3K280120033	VOCs
	P-34-224.55	F3K280120041	VOCs
	P-34-234.55	F3K280120042	VOCs
	P-34-244.55	F3K280120043	VOCs
	P-34-DUP-2 (P-34-244.55)	F3K280120044	VOCs
	P-34-254.55	F3K280120045	VOCs
	P-34-264.55	F3K280120046	VOCs
	P-34-284.55	F3K280120047	VOCs
	P-34-294.55	F3K280120048	VOCs
	P-34-304.50 (also MS/MSD)	F3K280120049	VOCs
	TB-11201125	F3K280120050	VOCs
	P-53-331.10	F3K280120051	VOCs
	P-53-340.05	F3K280120052	VOCs
F3L050365	P-34-324.50	F3L050365001	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3L050365 Cont'd	P-34-334.50	F3L050365002	VOCs
	TB-121124	F3L050365007	VOCs
F3L090146	P-33-EB-1	F3L090146001	VOCs
	P-33-159.6	F3L090146010	VOCs
	P-33-169.6	F3L090146011	VOCs
	P-33-179.6	F3L090146012	VOCs
	P-33-DUP-1 (P-33-169.6)	F3L090146013	VOCs
	P-33-189.6	F3L090146014	VOCs
	P-33-198.1	F3L090146015	VOCs
	P-33-214.6	F3L090146016	VOCs
	P-33-224.6	F3L090146017	VOCs
	P-53-426.75	F3L090146018	VOCs
	P-53-480.90	F3L090146019	VOCs
	TB-125128	F3L090146020	VOCs
F4A130259	P-31-EB-1	F4A130259001	VOCs
	P-31-190.40	F4A130259011	VOCs
	P-31-DUP-1 (P-31-190.40)	F4A130259012	VOCs
	P-55-EB-1	F4A130259019	VOCs
	P-55-DUP-1 (P-55-154.55)	F4A130259025	VOCs
	P-55-154.55	F4A130259029	VOCs
	TB-0105/0112	F4A130259030	VOCs
F4A150320	P-31-344.25	F4A150320004	VOCs
	P-31-351.55	F4A150320005	VOCs
	P-31-DUP-2 (P-31-351.55)	F4A150320006	VOCs
	P-55-164.55	F4A150320007	VOCs
	P-55-174.55	F4A150320008	VOCs
	P-55-186.15	F4A150320009	VOCs
	P-55-EB-2	F4A150320010	VOCs
	P-55-264.40	F4A150320013	VOCs
	P-55-271.00	F4A150320014	VOCs
	TB-01120114	F4A150320015	VOCs
F4A300327	P-55-311.95	F4A300327004	VOCs
	P-55-DUP-2 (P-55-311.95)	F4A300327005	VOCs
	TB-01220129	F4A300327009	VOCs

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F4A300327 Cont'd	P-56-DUP-2 (P-56-126.55)	F4A300327023	VOCs
F4B130279	P-32-174.35	F4B130279001	VOCs
	P-32-DUP-1 (P-32-174.35)	F4B130279002	VOCs
	P-32-224.35	F4B130279005	VOCs
	P-32-234.35	F4B130279006	VOCs
	P-32-241.01	F4B130279007	VOCs
	P-32-251.77	F4B130279008	VOCs
	P-32-259.35	F4B130279009	VOCs
	P-32-269.35	F4B130279010	VOCs
	TB-02110212	F4B130279012	VOCs
F4B170134	P-32-279.35	F4B170134001	VOCs
	TB-020916	F4B170134011	VOCs
F4B200226	P-32-488.9	F4B200226006	VOCs
	P-32-DUP-3 (P-32-488.9)	F4B200226007	VOCs
	TB-02090219	F4B200226008	VOCs

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report summarizes the findings of the review and outlines any deviations from the applicable quality control (QC) criteria referenced in the following documents:

- New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.

- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Organic Data Review.* EPA 540-R-99-008. October 1999.

- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.

- United States Environmental Protection Agency, Region 2. *Contract Laboratory Program* Organics *Data Review.* SOP No. HW-6, Revision #12. March 2001.

- United States Environmental Protection Agency, Region 2. *Standard Operating Procedure for the Validation of Organic Data Acquired Using SW-846 Method 8260B.* SOP No. HW-24, Revision #1. June 1999.

- URS Corporation. *GTE Operations Support Incorporated - Groundwater Investigation Work Plan, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* QAPP: Appendix C. September 2002.

1.3. Analytical Methods

The environmental samples presented in this report were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for volatile organic compound (VOC) analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW846 Method 5030B: Purge-and-Trap for Aqueous Samples
- SW846 Method 8260B: Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

The laboratory assigned an SDG number to a group of samples during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and QC analyses. A total of 403 samples in a total of 55 SDGs are included in this data validation report. The SDG, field identification, and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. Section 3 presents a summary of the findings associated with the validation and a discussion of the specific QA/QC deviations and qualifications performed on the sample data. Section 4 presents a discussion of data completeness and usability. Section 5 presents the Data Usability Summary Report (DUSR) summary information.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidances presented in the QAPP (GTEOSI, 2002), the analytical methodologies, the data validation guidelines referenced in Section 1, and professional judgment[7]. MPI performed a data review of all analytical results to assess data quality. A data review includes an assessment of sample handling protocols and supporting laboratory and field QC parameters. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements
- Analytical methods performed and test method references
- Sample condition - review of log-in records for cooler temperature, presence of headspace, chemical preservation, etc.
- Holding times - comparison of collection, preparation, and analysis dates
- Analytical results - units, values, significant figures
- Sample traceability to raw data
- Instrument tuning
- Initial calibration – comparison to technical guideline criteria
- Continuing calibration – comparison to technical guideline criteria
- Method blank results and laboratory contamination
- Laboratory control sample (LCS) results and comparison to laboratory control limits
- Matrix spike/matrix spike duplicate (MS/MSD) results and comparison to laboratory control limits
- Field replicate/duplicate results and comparison to technical guideline criteria
- Field QC sample (i.e., trip blanks, field blanks, equipment blanks)
- Surrogate recoveries (where applicable) and comparison to laboratory control limits
- Internal Standards (where applicable) and comparison to technical guideline criteria
- Compound identifications, quantitations, dilutions, and reporting limits
- Tentatively Identified Compounds (TICs)

[7] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

- Electronic Data Deliverables (EDDs) – comparison to the hardcopy analytical

The analytical reports were reviewed for completeness and the accompanying QC data were reviewed for acceptable performance. When QC results indicated poor performance, MPI applied data qualifiers to the results to inform the data user of the possible performance problem. These qualifiers are in addition to or a revision of the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory for organic analyses:

"U" Non-detect result at the laboratory established reporting limit.

"B" Associated with a result if the compound was also identified in the corresponding method blank.

"J" Indicates an estimated value or a value below the laboratory established reporting limit but above the method detection limit.

"E" This flag identifies compounds whose concentrations exceed the calibration range of the instrument for the specific analysis; data qualified with an "E" are qualitative only and not useable for quantitative purposes. All results qualified with an "E" were required to be re-analyzed using an applicable dilution and re-reported.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

"U" The compound was analyzed for, but was not detected above the reported quantitation limit.

"J" The compound was positively identified; the associated numerical value is the approximate concentration of the compound in the sample.

"N" The analysis indicates the presence of a compound for which there is presumptive evidence to make a "tentative identification".

"NJ" The analysis indicates the presence of a compound that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

"UJ" The compound was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the compound in the sample.

"R" The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the compound cannot be verified.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets Site-specific criteria for data quality and use. It was developed to review and evaluate the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

2. *Have all holding times been met?*

3. *Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?*

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

6. *Have the correct data qualifiers been used?*

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes whether the QA/QC parameters reported, which were specified in Section 2.1, met validation criteria. Summaries of the individual components of the review are described in the following sections.

3.2. Review of Validation Criteria

3.2.1. Completeness Review

The laboratory provided the analytical results using Contract Laboratory Program (CLP) –like format. Most documents were included in the report packages including a case narrative summarizing the QC issues associated with the project analyses. Documents missing from the report packages are detailed in Section 3.2.5.

3.2.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. They included USEPA SW-846 Method 5030B (purge and trap sample introduction) followed by Method 8260B (gas chromatography/mass spectrometry sample analysis). All samples were analyzed using a 25 mL (typical volume is 5 mL) purge volume, which offered lower reporting limits for each compound.

3.2.3. Sample Receipt

The laboratory received 403 water samples for VOC analysis between March 18, 2003 and February 20, 2004. The temperatures within most VOC sample shipment coolers at the time of laboratory receipt were within the recommended temperature range of 4°C ± 2°C. The exception was with SDG F3H180106 –see details below. Field and laboratory personnel completed the Chain-of-Custody (COC) documents recording the signature, date, and time of custody transfer. The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This form identifies whether the containers were received undamaged, within the proper temperature range, at the proper pH, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory.

The following problems with sample receipt were found:

- SDG F3F030298: sample P-15-189.65 was not submitted but was on the COC; sample TB-06-02-03 was not written on the COC but was submitted – the lab made corrections after contacting MPI. Sample P-D-77.05 pH was not less than 2; however, the sample was analyzed on the 7th day from date of sample collection – no qualification actions are necessary.

- SDG F3F120220: samples P-C-159.6 and P-C-169.6 were not submitted but were on the COC; sample TRIP BLANK was submitted but was not on the COC. In addition, sample P-C-99.6 had headspace; however, the laboratory did not indicate if both or only one of the bottles were affected – with the assumption that only one of the bottles were affected, no qualification was performed.

- SDG F3F180192: sample P-24-97.35 was not submitted but was on the COC.

- SDG F3F260187: sample FB-6-24 was relabeled on the COC as P-23-FB1, but was not relabeled on one of the sample bottles.

- SDG F3G110256: samples P-35-DUP-1 and TB-708710 were mistakenly documented as P-35-DUP-2 and P-35-708710, respectively, during the laboratory's sample log-in process, resulting in the wrong sample IDs reported; IDs were manually corrected during the validation process. Also, one sample container for sample P-35-DUP-1 has headspace; however, no qualification is performed since the laboratory would have used the second vial. Both sample containers for sample P-35-117.2 have headspace; therefore, all detects are qualified as estimated, "J," biased low; and all non-detects are qualified as rejected, "R."

- SDG F3G150156: two samples were received at the laboratory with no sample ID: they were identified based on sampling time.

- SDG F3H060192: sample P-45-81.25 was received but was not listed on the COC. The laboratory added it onto the COC.

- SDG F3H180108: the sample cooler arrived at the laboratory with an internal temperature of 29 °C. All the ice had melted, as Federal Express delivered it after four days in transit. All detects for all field samples were qualified as estimated, "J," biased low; and all non-detects were qualified as rejected, "R."

- SDG F3H270230: sample P-37-304.8 was received but was not listed on the COC. The laboratory added it onto the COC.

- SDG F3I090305: sample P-47-147.1 was received but was not listed on the COC. The laboratory included it for analysis within the SDG.

- SDG F3J030259: samples P-30-89.50 and P-30-99.50 were mistakenly documented as P-30-89.55 and P-30-99.55, respectively, during the laboratory's sample log-in process, resulting in the wrong sample ID reported – the ID was manually corrected during the validation process.

- SDG F3J070236: samples P-30A-298.6, P-30A-DUP-2, P-18-EB-1, P-18-156.65, and P-18-DUP-1 were presumed to be preserved to a pH < 2 during sample receipt by the laboratory. Due to the potential loss of volatile constituents, the sample vials were not checked for pH preservation until the time of analysis. Sample pH was not less than 2. The samples were analyzed outside the 7-day un-preserved technical holding time. Therefore, all aromatic compound results for these samples were qualified as estimated, "J" or "UJ."

- SDG F3J290103: sample P-51-DUP-2 was received but was not listed on the COC. The laboratory included it for analysis within the SDG.

- SDG F3K080109: sample TB-114116 was received but was not listed on the COC. The laboratory added it onto the COC.

- SDG F3K110173: sample P-54-267.95 was mistakenly documented as P-54-268.95 during the laboratory's sample log-in process, resulting in the wrong sample ID reported; the ID is manually corrected during the validation process. Samples P-54-267.95 and P-54-DUP-2 were noted to have headspace. Therefore, all detects for these two samples were qualified as estimated, "J," biased low; and all non-detects were qualified as rejected, "R."

- SDG F4A130259: the laboratory documented that sample container for sample P-55-84.10 has headspace; however, this review assumes that only one of the two containers has headspace. No qualification was performed since the laboratory would have used the second vial.

- SDG F4A150320: the laboratory documented that there was headspace in one container in each of the following samples: P-31-351.55, P-55-186.15, and P-55-EB-2. No qualification was performed since the laboratory would have used the second vial.

- SDG F4A300327: the laboratory documented that there was headspace with samples P-55-DUP-2 and P-55-311.95; however, this review assumes that only one of the two containers for each sample has headspace. No qualification was performed since the laboratory would have used the second vial. Sample P-56-DUP-2 was submitted as a blind duplicate of sample P-56-126.55. However, sample P-56-126.55 was never submitter. Therefore, the duplicate sample will be considered as the original sample, and duplicate recovery criteria will not be evaluated with this sample.

- SDG F4B130279: two VOA vials were received by the laboratory for sample P-32-EB-1, which were not listed on the COC. There is no indication that the laboratory informed MPI, and the sample was not analyzed.

There were no custody seals attached to individual sample bottles. No qualification was necessary because the exterior of the shipment coolers had intact custody seals. However, some cooler exteriors were noted to have no custody seals: SDGs F3F120220, F3F170126, F3F260187, F3G150156, F3I150101, F3K110173, F3L090146, and F4B200226. Based on professional judgment, no qualification was performed because the custodies during shipment were maintained by Federal Express, and the coolers were shipped over-night with early morning arrival at the laboratory.

There were occasions where a VOC sample bottles broke during shipment; however, there was always a second aliquot sample bottle, which arrived at the laboratory intact.

3.2.4. Holding Times

The laboratory performed almost all VOC analyses within the technical holding time of 14 days from date of sample collection. Most samples were correctly preserved with acid to a pH of ≤ 2. The following were problems observed:

- SDG F3L090146: the reanalysis of sample P-53-480.90 was performed on the 18th day from the date of sample collection. The initial analysis was performed within holding time; however, one of the compounds was detected slightly above the calibration range. Based on professional judgment, the data from the initial analysis was reported, and the reanalysis is to be disregarded. The compound concentration, which exceeded the calibration range, is qualified as estimated, "J."

- SDG F4A150320: the following samples were re-analyzed outside holding time: P-31-351.55 RE, P-31-DUP-2 RE, P-55-164.55 DL, P-55-174.55 DL, P-55-186.15 DL, P-55-EB-2 RE, P-55-264.40 DL, and P-55-271.00 DL. They were re-analyzed due to QC deficiencies associated with the initial analysis or the need for additional dilutions. All results for the re-analyzed samples were qualified as estimated, "J," biased low. As part of this validation, specific compound results from the re-analysis were combined with the initial analysis results to form the final validated results. A list of the affected compounds is located in Table 3-7 of Section 3.2.17.

- SDG F4A300327: the following samples were analyzed outside holding time: P-55-311.95 RE and P-55-DUP-2. Sample P-55-311.95 RE was a re-analysis. All results for the re-analyzed sample were qualified as estimated, "J," biased low. As part of this validation, specific compound results from the re-analysis are combined with the initial analysis results to form the final validated results. A list of the affected compounds is located in Table 3-7 of Section 3.2.17. Sample P-55-DUP-2 was analyzed 11 minutes passed the holding time. No qualifications were necessary based on professional judgment.

3.2.5. Analytical Results

For each sample tested, the laboratory provided the analytical test information using the CLP -like format. This format requires the use of stylized forms to present critical information pertaining to the analyses performed. For all analytical results, the laboratory provided a "Form I" with the reported analytical results for the requested analyses. The Form I format presents the following information for organic analyses: the laboratory name; the laboratory code; the matrix; the sample volume to final purge volume; the sample identification; the laboratory file identification; the date the sample was received; the date the sample was analyzed; the dilution factor; the chemical abstract service (CAS) number; the units of measure; and the laboratory qualifier (if any). The laboratory did not always provide all CLP forms (or CLP-like forms); however, all information from the missing forms can be obtained within the raw data submitted.

The specific forms, which were not submitted, or not summarized in the CLP format, were associated with the following SDGs:

SDG F3C190235:

- Form IIA – Water Volatile System Monitoring Compound Recovery
- Form IV – Volatile Method Blank Summary
- Form V – Volatile Organic Instrument Performance Check

SDGs F3I040177, F3I120107, and F3K080109:

- Form IIA – Water Volatile System Monitoring Compound Recovery

SDG F3K280120:

- Form V – Volatile Organic Instrument Performance Check – not tabulated for seven samples
- Form VIII – Volatile Internal Standard Area and RT Summary - not tabulated for seven samples

SDG F4A130259:

- All QC summary forms were missing in the data package. However, they were submitted by the laboratory after requested.

For many of the later SDGs, the surrogate limits specified on Form II (Surrogate Recovery) were not consistent with the laboratory's report forms for results. The limits on the report forms for results (Form I) were used for this validation.

3.2.6. Traceability to Raw Data

Traceability of the VOC analyses is established by Form V (Instrument Performance Check). These forms list the project samples analyzed per laboratory batch processed and the corresponding QC samples performed with the project samples. Although Form V was not submitted in SDG F3C190235, the information was obtained within the raw data submitted.

3.2.7. Instrument Tuning

The GC/MS instrument performance (i.e., "tuning data," or a check of mass spectral ion intensities using bromofluorobenzene [BFB]) met method criteria. The instrument performance was checked prior to calibration and once every 12-hour shift for all analytical QC batches. The following deficiencies are noted:

- For SDG F3E230179, sample TB-051903B was analyzed 7 minutes pass the 12–hour instrument tune time. There was no additional sample aliquot to perform the analysis again since the second VOC bottle was broken during shipment to the laboratory. Based of professional judgment, no data qualifications are necessary for analyzing the sample slightly past the 12-hour tune time.

- SDG F3K280120: tabulations were not performed for seven samples on Form V. Information from the raw data was used to perform these checks during the data validation process. No data qualifications are necessary.

3.2.8. Initial Calibration

Initial Calibrations (ICALs) were performed at six levels with most compound concentrations from 1 ug/L to 40 ug/L. Some compounds in the ICALs did not meet data validation criteria [i.e., relative response factors (RRFs) technical criteria of $\geq$ 0.05, and the percent relative standard deviations (%RSDs) technical criteria of $\leq$ 15%]. Additionally, for all target compounds, method requirements recommended compounds to be quantitated using the average relative response factor (avgRRF) only, if the %RSD is less than 15%. The method recommended all compounds with a %RSD greater than 15% to be quantitated with a calibration curve rather than the avgRRF. The laboratory does not prepare calibration curves for compounds with %RSDs greater than 15% as recommended within the method. Rather, the laboratory uses an alternate approach to the ICAL evaluation by evaluating the average RRF (for all compounds calibrated). If their average RRF is less than 15% (across all compounds) then the laboratory considers this to mean that they have met method criteria for the ICAL. Since this evaluation approach is not widely used, a conservative approach was used for the validation process and all results were qualified as estimated ("J" or "UJ") that were associated with the laboratory ICALs that had a %RSD greater than 15%. Table 3-1 shows a summary of the samples and compounds qualified as estimated, "J," or not usable, "R," due to ICAL deficiencies.

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	*Initial Calibration Date*	*Sample ID*	*Compounds*	*Action*
F3C190235	01/15/03, 14:31	TB-A TB-B MW-7 MW-7 DL MW-2 MW-2 DL MW-1 MW-1 DL MW-11 MW-12 MW-12 DL MW-5 MW-5 DL MW-10 MW-10 DL MW-9 MW-6 MW-3 MW-3 DL MW-4 MW-4 DL MW-8 FB MW-DUP MW-DUP DL	%RSD: Bromomethane Methylene Chloride Acetone m,p-Xylene RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3D290160	04/15/03, 15:32	P-17-73.25 P-17-92.25 P-17-223.1 P-FB-1 P-F-86.48 TB-1 P-F-76.46	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3E060217	04/15/03, 15:32	P-27-89.75 P-27-DUP P-27-99.75 P-27-139.75 P-27-199.75 P-28-87.02 P-28-97.02 P-28-147.02 P-28-207.02 TB-2	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3E160130	05/16/03, 15:51	P-26-231.25 P-26-241.25 P-E-78.57 P-E-88.57 P-E-98.57 TRIP BLANK	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	*Initial Calibration Date*	*Sample ID*	*Compounds*	*Action*
F3E200165	05/16/03, 15:51	P-26-257.2 P-26-267.2 P-26A-276.53 P-26A-286.5 P-26A-295.85 TRIP BLANK P-E-128.57 P-E-138.57 P-E-148.57 P-E-158.57	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3E230175	05/16/03, 15:51	P-E-292.28 P-E-292.28 DL P-E-301.23 P-E-301.23 DL P-E-332.85 P-E-327.15 TB-051903B	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3E290170	05/16/03, 15:51	P-D-87.05 1EB-5/27 P-D-97.05 P-D-107.05 TB-05-28-03 TB-05-28-03 RE P-15-79.65 P-15-79.65 RE P-15-89.65 P-15-99.65 P-15-109.65 P-15-119.65	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F030298	05/16/03, 15:51	P-15-179.65 P-D-257. P-D-290.1 P-D-77.05 P-D-117.05 P-D-127.05 P-D-137.05 P-D-147.05 TB-06-02-03	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F120220	06/06/03, 01:01	P-C-89.6 P-C-99.6 P-C-DUP-1 TRIP BLANK	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F170126	06/06/03, 01:01	P-C-320.3 P-C-330.3 P-C-337.5 P-C-337.5 DL P-24-87.35 P-24-77.35 TB-612-616 P-C-FB P-C-159.6 P-C-169.6	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F3F180192	06/06/03, 01:01	TB-617 P-24-127.3 P-24-137.3 P-24-137.3 RE P-C-347.7	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F200145	06/06/03, 01:01	P-24-157.3 P-24-167.3 P-24-177.3 P-24-187.3 P-24-197.3 P-24-207.3 P-24-207.3 DL P-24-217.3 P-24-DUP-1 P-24-227.3 P-24-237.3 P-24-247.3 P-24-257.3 TB-619 P-24-147.3 P-24-267.3 P-24-277.3 P-24-287.3 P-24-DUP-2 P-C-364.5 P-C-374.5 P-C-394.5 P-C-384.5	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F260187	06/06/03, 01:01	P-24-297.3 P-23-FB-1 P-23-180.1 P-23-DUP-1 P-23-DUP-1 DL TB-619625	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F270132	06/06/03, 01:01	TB-625626 P-23-150.1 P-23-160.1	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G010309	06/06/03, 01:01	P-23-239.8 P-23-252.0 P-23-262.0 P-23A-286.96 P-23A-293.50 TB-627630	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F3G030162	06/06/03, 01:01	TB-701702 P-23A-DUP-1 P-23A-347.6	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G110256	06/06/03, 01:01	P-25-EB-1 P-25-169.7 P-25-179.7 P-25-DUP-1 P-35-EB-1 P-35-117.2 P-35-177.2 P-35-DUP-1 TB-708710	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G150156	06/06/03, 01:01	P-25-275.8 P-25-DUP-2 P-25-349.4 P-25-349.4 RE P-35-EB-2 P-35-332.2 P-35-DUP-2 TB-710714	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G230216	06/06/03, 01:01	P-H-EB-1 P-H-EB-1 RE P-H-116.8 TB721722 P-42-EB-1	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G250374	06/06/03, 01:01	P-H-106.8 P-H-136.8 P-H-146.8 P-H-156.8 P-H-EB-2 P-H-206.55 P-42-202.7 P-42-DUP-1 P-42-DUP-1 DL P-42-DUP-1 DL RE P-42-DUP-1 DL RE RE P-H-DUP-2 TB-722724	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F3G290207	06/06/03, 01:01	P-H-351.65 P-42-217.2 P-42-276.4 P-42-329.8 P-42-DUP-2 P-42-354.6 TB-724728	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H060192	08/11/03, 15:34	P-20-149.60 P-20-159.60 P-20-EB-1 P-45-81.25 TB-804805 P-45-131.25 P-45-DUP-1 P-45-DUP-1 RE	%RSD: Bromomethane Methylene Chloride Acetone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H080219	08/11/03, 15:34	P-20-220.76 P-20-229.70 TB-805807 P-45-151.25 P-45-207.25	%RSD: Bromomethane Methylene Chloride Acetone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H080219	08/11/03, 15:34	P-45-281.65 P-20-309.60 P-20-319.60 P-20-FB TB-8-12 P-20-427.99 P-20-DUP-2	%RSD: Bromomethane Methylene Chloride Acetone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H080219	08/11/03, 15:34	P-45-366.39 P-45-DUP-2 P-20-476.68 TB-0813 TB-0813 RE	%RSD: Bromomethane Methylene Chloride Acetone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H080219	08/11/03, 15:34	P-36-EB-1 P-37-119.95 P-37-DUP-1 TB-819820	%RSD: Bromomethane Methylene Chloride Acetone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F3H220246	08/27/03, 22:31	P-36-156.7 P-36-DUP-1 P-46-139.60 P-46-DUP-1 P-37-EB-1 TB-820821	%RSD: Bromomethane Chloroethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H270230	08/27/03, 22:31	P-46-275.42 P-46-DUP-2 P-36A-282.0 P-36-136.7 P-37-284.4 P-37-304.8 P-37-DUP-2 TB-821-824	%RSD: Bromomethane Chloroethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I040177	08/27/03, 22:31	EB-1-44 EB-2-P-44 P-44-99.3 P-44-DUP-1 TB-90203	%RSD: Bromomethane Chloroethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I050189	08/27/03, 22:31	P-44-149.8 TB-903904	%RSD: Bromomethane Chloroethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	09/08/03, 16:37	P-44-149.8 DL	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	*Initial Calibration Date*	*Sample ID*	*Compounds*	*Action*
F3I090305	09/08/03, 16:37	P-44-215.5 P-44-215.5 DL P-44-229.2 P-44-229.2 DL P-44-239.85 P-44-239.5 DL P-44-249.85 P-44-249.8 DL P-44-257.1 P-44-EB-3 P-47-DUP-1 P-47-147.1 P-47-177.0 P-47-205.7 TB-904908	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I120107	09/08/03, 16:37	P-43-EB-1 P-43-119.88 P-43-DUP-1 P-44-339.8 TB-908910	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I150101	09/17/03, 14:56	P-43-129.88 P-47-197.0 TB-906911	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I180259	09/17/03, 14:56	P-29-109.5 P-29-DUP-1 TB-916917 P-38-FB-1 P-38-116.7 P-38-DUP-1 P-38-146.7	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F3I230231	09/17/03, 14:56	P-29-EB-1 P-29-310.2 P-29-329.85 P-29-DUP-2 P-29-EB-2 P-29-360.0 P-38-186.3 P-38-207.5 P-38-216.3 P-38-260.7 P-38-260.7 RE P-43-246.68 P-43-246.68 RE P-43-DUP-2 P-43-DUP-2 RE P-43-294.85 P-43-294.85 RE TB-917922 P-29-390.0	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I250196	09/17/03, 14:56	P-38-FB-2 P-38-DUP-3 (P-38-381.3) TB-923924	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3J030259	09/17/03, 14:56	P-30-89.50 P-30-99.50 P-30-204.55 P-30-DUP-1 TB1-930102	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3J070236	09/17/03, 14:56	P-30A-298.6 P-30A-DUP-2 P-18-EB-1 P-18-156.65 P-18-DUP-1 TB-102106	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3J110172	09/17/03, 14:56	P-30A-406.55 P-30A-DUP-3 P-18-217.65 P-18-247.65 P-18-DUP-2 P-18-257.65 P-18-267.65 P-18-277.65 P-18-287.65 P-18-302.66 TB-106109 P-18-335.80	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F3J240204	09/17/03, 14:56	P-50-109.90 P-50-109.90 DL P-50-119.90 P-50-129.90 P-50-DUP-1 P-50-139.90 P-50-149.90 P-49-114.3 P-49-124.3 P-49-167.3 P-49-DUP-1 TB10211023 P-51-117.78 P-51-127.78 P-49-EB-1	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3J290103	09/17/03, 14:56	P-50-249.90 P-50-267.44 P-50-309.90 P-50-EB-2 P-50-342.60 P-50-DUP-2 P-50-DUP-2 RE TB-10231027 P-49-269.3 P-49-269.3 RE P-49-284.3 P-49-284.3 RE P-49-340.8 P-49-DUP-2 P-49-DUP-2 DL P-51-187.78 P-51-DUP-2 P-51-246.75	%RSD: Bromomethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3J310287	11/06/03, 23:17	P-51-301.12 P-51-321.00 P-51-327.85 TB-10271030	%RSD: Bromomethane Chloroethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3K080109	11/06/03, 23:17	P-54-107.55 P-54-107.55 DL P-52-EB-1 P-52-170.0 P-52-DUP-1 P-52-DUP-1 RE P-58-EB-1 P-58-159.65 P-58-DUP-1 TB-114116	%RSD: Bromomethane Chloroethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F3K110173	11/06/03, 23:17	P-58-274.65 P-58-DUP-2 P-58-DUP-2 RE P-54-267.95 P-54-267.95 RE P-54-DUP-2 P-54-DUP-2 RE P-54-276.4 TB-1171110	%RSD: Bromomethane Chloroethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3K140242	11/19/03, 1622	P-54-351.25 P-54-351.25 DL P-54-DUP-3 P-54-DUP-3 DL TB-11101113	%RSD: Bromomethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3K210372	11/19/03, 1622	P-52-EB-2 TB-11171120 EB-P-54-11-17 P-53-EB-11-20	%RSD: Bromomethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3K280120	11/19/03, 1622	P-53-146.40 P-53-DUP-1 P-53-266.35 P-53-DUP-2 P-34-EB-1 P-34-139.55 P-34-DUP-1 P-34-224.55 P-34-234.55 P-34-244.55 P-34-DUP-2 P-34-254.55 P-34-264.55 P-34-284.55 P-34-294.55 P-34-304.50 TB-11201125 P-53-331.10 P-53-340.05 P-53-340.05 RE	%RSD: Bromomethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F3K280120	11/19/03, 1622	P-34-324.50 P-34-334.50 TB-121124	%RSD: Bromomethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3K280120	11/19/03, 1622	P-33-EB-1 P-33-159.6 P-33-169.6 P-33-179.6 P-33-DUP-1 P-33-189.6 P-33-198.1 P-33-214.6 P-33-224.6 P-53-426.75 P-53-480.90 TB-125128	%RSD: Bromomethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F4A130259	01/14/04, 1456	P-31-EB-1 P-31-EB-1 RE	%RSD: Bromomethane Carbon Disulfide Methylene Chloride Acetone 2-Butanone Bromoform RRF: Bromomethane Acetone 2-Butanone 4-Methyl-2-pentanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	01/19/04, 1421	P-55-EB-1 P-55-EB-1 DL TB-01050112 P-31-190.40 P-31-190.40 RE P-31-DUP-1 P-31-DUP-1 RE P-55-DUP-1 P-55-DUP-1 RE P-55-154.55 P-55-154.55 RE	%RSD: Chloromethane Bromomethane Chloroethane Methylene Chloride 2-Butanone Dibromochloro-methane Bromoform RRF: Bromomethane Acetone 2-Butanone 4-Methyl-2-pentanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F4A150320	01/19/04, 1421	P-55-164.55 P-55-174.55 P-55-186.15 P-55-EB-2 TB-01120114	%RSD: Chloromethane Bromomethane Chloroethane Methylene Chloride 2-Butanone Dibromochloro-methane Bromoform RRF: Bromomethane Acetone 2-Butanone 4-Methyl-2-pentanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	01/28/04, 1225	P-31-344.25 P-31-351.55 P-31-DUP-2 P-31-344.25 RE P-55-264.40 P-55-271.00 TB-01120114 RE	%RSD: Chloromethane Vinyl chloride Bromomethane Chloroethane Methylene Chloride Acetone 2-Butanone Dibromochloro-methane 2-Hexanone Bromoform RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	02/02/04, 1153	P-31-351.55 RE P-31-DUP-2 RE P-55-264.40 DL	%RSD: Bromomethane Methylene Chloride Acetone Bromoform RRF: Bromomethane Acetone 2-Butanone 4-Methyl-2-pentanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	02/02/04, 1636	P-55-EB-2 RE	%RSD: Bromomethane Chloroethane Acetone Methylene Chloride RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F4A150320 Cont'd	02/03/04, 0420	P-55-271.00 DL P-55-164.55 DL P-55-174.55 DL P-55-186.15 DL	%RSD: Bromomethane Methylene Chloride Acetone RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F4A300327	02/02/04, 1636	TB-01220129 P-56-126.55 P-55-311.95 P-55-311.95 RE	%RSD: Bromomethane Chloroethane Acetone Methylene Chloride RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	02/09/04, 1410	P-55-DUP-2	%RSD: Vinyl chloride Acetone Methylene Chloride 2-Butanone RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F4B130279	02/02/04, 1636	P-32-174.35 P-32-DUP-1 P-32-224.35 P-32-234.35 P-32-241.01 P-32-251.77 P-32-259.35 P-32-269.35 TB-02110212	%RSD: Bromomethane Chloroethane Acetone Methylene Chloride RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F4B170134	02/02/04, 1636	P-32-279.35 TB-020916	%RSD: Bromomethane Chloroethane Acetone Methylene Chloride RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F4B200226	02/02/04, 1636	P-32-488.9	%RSD: Bromomethane Chloroethane Acetone Methylene Chloride RRF: Bromomethane Acetone 2-Butanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	02/27/04, 1327	P-32-DUP-3 TB-02090219	%RSD: Bromomethane Chloroethane 1,1-Dichloroethene Acetone Carbon disulfide 1,1,1-Trichloroethane Carbon Tetrachloride Tetrachloroethene Bromoform Xylenes (total) RRF: Bromomethane Chloroethane Acetone 2-Butanone 4-Methyl-2-pentanone	% RSD > 15% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Notes:
DL Suffix – Indicates a secondary diluted sample reanalysis
RE Suffix – Indicates a reanalysis at the same dilution

3.2.9. Continuing Calibration

The continuing calibration (CCAL) verification analyses were performed with a mid-level standard immediately following the tuning check at the beginning of each 12-hour analytical sequence. Some compounds in the CCAL verification analyses did not meet data validation criteria (i.e., RRFs technical criteria of ≥ 0.05, and the percent differences (%Ds) from the average RRF technical criteria of ≤ 20%. Table 3-2 shows a summary of the samples and compounds qualified as estimated, "J," or not usable, "R," due to CCAL deficiencies.

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F3C190235	03/20/03, 15:15	TB-A TB-B MW-7 MW-2 MW-1 MW-11 MW-12 MW-5 MW-10 MW-3 MW-8	% D: Bromomethane Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	03/21/03, 15:32	MW-2 (rea) MW-1 (rea) MW-12 (rea) MW-5 (rea) MW-10 (rea) MW-9 MW-6 MW-3 (rea) MW-4 FB MW-DUP	% D: Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	03/25/03, 09:12	MW-7 (rea) MW-4 (rea) MW-DUP (rea)	% D: Bromomethane Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3D290160	05/05/03, 08:01	P-17-73.25 P-17-92.25 P-17-223.1 P-FB-1 P-F-86.48 TB-1 P-F-76.46	% D: Chloromethane Bromomethane RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3E060217	05/07/03, 08:58	P-27-89.75 P-27-DUP P-27-99.75 P-27-139.75 P-27-199.75 P-28-87.02 P-28-97.02 P-28-147.02 P-28-207.02 TB-2	% D: Bromomethane Acetone RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F3E160130	05/21/03, 08:56	P-26-231.25 P-26-241.25 P-E-78.57 P-E-88.57 P-E-98.57 TRIP BLANK	% D: Acetone Methylene Chloride RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3E200165	05/21/03, 08:56	P-26-257.2 P-26-267.2 P-26A-276.53 P-26A-286.5 P-26A-295.85 TRIP BLANK	% D: Acetone Methylene Chloride RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	05/22/03, 09:42	P-E-128.57 P-E-138.57 P-E-148.57 P-E-158.57	% D: Chloromethane Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3E230179	05/27/03, 09:23	P-E-292.28 P-E-301.23 P-E-332.85 P-E-327.15 TB-051903B	% D: Acetone trans-1,3-Dichloropropene RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	05/28/03, 08:42	P-E-292.28 DL P-E-301.23 DL	% D: Chloromethane Methylene Chloride Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3E290170	06/02/03, 15:51	P-D-87.05 1EB-5/27 P-D-97.05 P-D-107.05 TB-05-28-03 TB-05-28-03 RE P-15-79.65 P-15-89.65 P-15-99.65 P-15-109.65 P-15-119.65	% D: Methylene Chloride Acetone RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F3E290170 Cont'd	06/03/03, 09:19	P-15-79.65 RE	% D: Acetone 1,1,2,2-Tetrachloroethane RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F030298	06/04/03, 09:53	P-15-179.65 P-D-257. P-D-290.1 P-D-77.05 P-D-117.05 P-D-127.05 P-D-137.05 P-D-147.05 TB-06-02-03	% D: Acetone 2-Butanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F120220	06/13/03, 18:08	P-C-89.6 P-C-99.6 P-C-DUP-1 TRIP BLANK	% D: Chloromethane Bromomethane Methylene chloride Acetone RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F170126	06/19/03, 12:25	P-C-320.3 P-C-330.3 P-C-337.5 P-24-87.35 P-24-77.35 TB-612-616 P-C-FB P-C-159.6 P-C-169.6	% D: Vinyl chloride Bromomethane Carbon disulfide Methylene chloride Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	06/20/03, 11:05	P-C-337.5 DL	% D: Bromomethane Carbon disulfide Methylene chloride 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F180192	06/20/03, 11:05	TB-617 P-24-127.3 P-24-137.3 P-C-347.7	% D: Bromomethane Carbon disulfide Methylene chloride 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***CCAL Date***	***Sample ID***	***Compounds***	***Action***
F3F180192 Cont'd	06/23/03, 09:48	P-24-137.3 RE	% D: Chloroethane Bromomethane Carbon disulfide Methylene chloride 2-Butanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F200145	06/23/03, 09:48	P-24-157.3 P-24-167.3 P-24-177.3 P-24-187.3 P-24-197.3 P-24-207.3 P-24-217.3 P-24-DUP-1 P-24-227.3 P-24-237.3 P-24-247.3 P-24-257.3	% D: Chloroethane Bromomethane Carbon disulfide Methylene chloride 2-Butanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	06/24/03, 18:19	P-24-207.3 DL TB-619 P-24-147.3 P-24-267.3 P-24-277.3 P-24-287.3 P-24-DUP-2 P-C-364.5 P-C-374.5 P-C-394.5 P-C-384.5	% D: Bromomethane RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F260187	06/30/03, 09:32	P-24-297.3 P-23-FB-1 P-23-180.1 P-23-DUP-1 P-23-DUP-1 DL TB-619625	% D: Bromomethane Acetone 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3F270132	07/02/03, 08:33	TB-625626 P-23-150.1 P-23-160.1	% D: Bromomethane Methylene chloride 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***CCAL Date***	***Sample ID***	***Compounds***	***Action***
F3G010309	07/03/03, 09:32	P-23-239.8 P-23-252.0 P-23-262.0 P-23A-286.96 P-23A-293.50 TB-627630	% D: Chloromethane Bromomethane Acetone 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G030162	07/07/03, 15:37	TB-701702 P-23A-DUP-1 P-23A-347.6	% D: Bromomethane 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G110256	07/14/03, 12:40	P-25-EB-1 P-25-169.7 P-25-179.7 TB-708710	% D: Bromomethane 2-Butanone 2-Hexanone RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	07/15/03, 08:57	P-25-EB-1 DL P-25-DUP-1 P-35-EB-1 P-35-117.2 P-35-177.2 P-35-DUP-1	% D: Bromomethane Methylene chloride Bromoform RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G150156	07/15/03, 22:09	P-25-275.8 P-25-DUP-2 P-25-349.4 P-25-349.4 RE P-35-EB-2 P-35-332.2 P-35-DUP-2 TB-710714	% D: Bromomethane RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G230216	07/25/03, 08:39	P-H-EB-1 P-H-EB-1 RE P-H-116.8 TB721722 P-42-EB-1	% D: Bromomethane Bromoform RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***CCAL Date***	***Sample ID***	***Compounds***	***Action***
F3G250374	07/29/03, 08:52	P-H-106.8 P-H-136.8 P-H-146.8 P-H-156.8 P-H-EB-2 P-H-206.55 P-42-202.7 P-42-DUP-1 DL RE P-H-DUP-2 TB-722724	% D: Bromomethane 2-Butanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	07/30/03, 09:26	P-42-DUP-1 P-42-DUP-1 DL P-42-DUP-1 DL RE RE	% D: Bromomethane Methylene chloride 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3G290207	07/31/03, 08:37	P-H-351.65 P-42-217.2 P-42-276.4 P-42-329.8 P-42-DUP-2 P-42-354.6 TB-724728	% D: Bromomethane Acetone 1,1-Dichloroethane 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H060192	08/11/03, 16:57	P-20-149.60 P-20-159.60 P-20-EB-1 P-45-81.25 TB-804805	% D: Chloromethane Bromomethane 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	08/12/03, 09:13	P-45-131.25 P-45-DUP-1 P-45-DUP-1 RE	% D: Bromomethane RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H080219	08/11/03, 16:57	P-20-220.76 P-20-229.70 TB-805807 P-45-151.25 P-45-207.25	% D: Chloromethane Bromomethane 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***CCAL Date***	***Sample ID***	***Compounds***	***Action***
F3H130195	08/14/03, 08:41	P-45-281.65 P-20-309.60 P-20-319.60 P-20-FB TB-8-12 P-20-427.99 P-20-DUP-2	% D: Bromomethane Methylene chloride 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H180106	08/18/03, 14:08	P-45-366.39 P-45-DUP-2 P-20-476.68 TB-0813 TB-0813 RE	% D: Bromomethane Chloroethane Methylene chloride 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H210288	08/24/03, 09:06	P-36-EB-1 P-37-119.95 P-37-DUP-1 TB-819820	% D: Bromomethane Chloroethane Methylene chloride 2-Butanone 2-Hexanone Bromoform RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H220246	08/28/03, 09:07	P-36-156.7 P-36-DUP-1	% D: Acetone 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3H270230	08/28/03, 09:07	P-46-275.42 P-46-DUP-2 P-36A-282.0 P-36-136.7 P-37-284.4 P-37-304.8 P-37-DUP-2 TB-821-824	% D: Acetone 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F3I040177	09/04/03, 12:05	EB-1-44 EB-2-P-44 P-44-99.3 P-44-DUP-1 TB-90203	% D: Bromomethane Acetone 2-Butanone 4-Methyl-2-pentanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I050189	09/05/03, 08:45	P-44-149.8 TB-903904	% D: Bromomethane Acetone 2-Butanone 4-Methyl-2-pentanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	09/09/03, 09:47	P-44-149.8 DL	% D: Methylene chloride RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I090305	09/11/03, 08:34	P-44-215.5 P-44-229.2 P-44-229.2 DL P-44-239.85 P-44-249.85 P-44-257.1 P-44-EB-3 P-47-DUP-1 P-47-147.1 P-47-177.0 P-47-205.7 TB-904908	% D: Acetone Bromoform RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	09/12/03, 08:47	P-44-215.5 DL P-44-239.5 DL P-44-249.8 DL	% D: Bromoform RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I120107	09/13/03, 13:57	P-43-EB-1 P-43-119.88 P-43-DUP-1 P-44-339.8 TB-908910	% D: Bromoform RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***CCAL Date***	***Sample ID***	***Compounds***	***Action***
F3I150101	09/18/03, 09:06	P-43-129.88 P-47-197.0 TB-906911	% D: Chloroethane Methylene chloride Acetone 2-Butanone Bromoform RRF: 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I180259	09/21/03, 11:30	P-29-109.5 P-29-DUP-1 TB-916917 P-38-FB-1 P-38-116.7 P-38-DUP-1 P-38-146.7	% D: Bromomethane Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I230231	09/29/03, 09:48	P-29-EB-1 P-29-310.2 P-29-329.85 P-29-DUP-2 P-29-EB-2 P-29-360.0 TB-917922	% D: Bromomethane Chloroethane Methylene chloride trans-1,3-Dichloropropene RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	09/30/03, 08:33	P-38-186.3 P-38-207.5 P-38-216.3 P-38-260.7 P-38-260.7 RE P-43-246.68 P-43-246.68 RE P-43-DUP-2 P-43-DUP-2 RE P-43-294.85 P-43-294.85 RE P-29-390.0	% D: Bromomethane RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3I250196	10/01/03, 09:13	P-38-FB-2 P-38-DUP-3 (P-38-381.3) TB-923924	% D: Bromomethane Methylene chloride RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3J030259	10/06/03, 09:34	P-30-89.50 P-30-99.50 P-30-204.55 P-30-DUP-1 TB1-930102	% D: Bromomethane 2-Butanone 4-Methyl-2-pentanone 2-Hexznone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F3J070236	10/14/03, 09:22	P-30A-298.6 P-30A-DUP-2 P-18-EB-1 P-18-156.65 P-18-DUP-1 TB-102106	% D: 2-Butanone Cis-1,3-dichloropropene 4-Methyl-2-pentanone 1,1,2,2-Tetrachloroethane RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3J110172	10/16/03, 08:49	P-30A-406.55 P-30A-DUP-3 P-18-217.65 P-18-247.65 P-18-DUP-2	% D: Bromomethane Chloroethane Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	10/16/03, 21:27	P-18-257.65 P-18-267.65 P-18-277.65 P-18-287.65 P-18-302.66 TB-106109 P-18-335.80	% D: Chloromethane Methylene chloride Acetone 4-Methyl-2-pentanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3J240204	10/30/03, 19:11	P-50-109.90 P-50-119.90 P-50-129.90 P-50-DUP-1 P-50-139.90 P-50-149.90 P-49-114.3 P-49-124.3 P-49-167.3 P-49-DUP-1 TB10211023 P-51-117.78 P-51-127.78 P-49-EB-1	% D: Chloromethane Bromomethane 2-Butanone 4-Methyl-2-pentanone trans-1,3-Dichloropropene 1,1,2-Trichloroethane RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	11/04/03, 08:51	P-50-109.90 DL	Reviewed for Vinyl chloride only	None
F3J290103	11/04/03, 08:51	P-50-249.90 P-50-267.44 P-50-309.90 P-50-EB-2 TB-10231027	% D: Methylene chloride Acetone RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***CCAL Date***	***Sample ID***	***Compounds***	***Action***
F3J290103 Cont'd	11/04/03, 20:12	P-50-342.60 P-50-DUP-2 P-49-269.3 P-49-284.3 P-49-340.8 P-49-DUP-2 P-51-187.78 P-51-DUP-2 P-51-246.75 P-49-DUP-2 DL P-50-DUP-2 RE	<u>% D:</u> Bromomethane 2-Butanone 4-Methyl-2-pentanone trans-1,3-Dichloropropene 1,1,2-Trichloroethane 1,1,2,2-Tetrachloroethane <u>RRF:</u> Bromomethane Acetone 2-Butanone	<u>%D > 20%</u> UJ – all non-detect results J – all positive results <u>RRF < 0.05</u> R – all non-detect results J – all positive results
	11/05/03, 10:17	P-49-269.3 RE P-49-284.3 RE	<u>% D:</u> Bromomethane 1,1-Dichloroethane 2-Butanone 4-Methyl-2-pentanone trans-1,3-Dichloropropene 1,1,2-Trichloroethane <u>RRF:</u> Bromomethane Acetone 2-Butanone	<u>%D > 20%</u> UJ – all non-detect results J – all positive results <u>RRF < 0.05</u> R – all non-detect results J – all positive results
F3K080109	11/14/03, 10:21	P-54-107.55 P-54-107.55 DL P-52-EB-1 P-52-170.0 P-52-DUP-1 P-58-EB-1 P-58-159.65 P-58-DUP-1 TB-114116	<u>% D:</u> Bromomethane Methylene chloride Acetone Carbon tetrachloride 2-Butanone Trichloroethene 4-Methyl-2-pentanone Tetrachloroethene 2-Hexanone 1,1,2,2-Tetrachloroethane <u>RRF:</u> Bromomethane Acetone 2-Butanone	<u>%D > 20%</u> UJ – all non-detect results J – all positive results <u>RRF < 0.05</u> R – all non-detect results J – all positive results
	11/18/03, 09:33	P-52-DUP-1 RE	<u>% D:</u> Acetone <u>RRF:</u> Bromomethane Acetone 2-Butanone	<u>%D > 20%</u> UJ – all non-detect results J – all positive results <u>RRF < 0.05</u> R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F3K110173	11/14/03, 10:21	P-58-274.65 P-58-DUP-2 P-54-267.95 P-54-DUP-2 TB-1171110	% D: Bromomethane Methylene chloride Acetone Carbon tetrachloride 2-Butanone Trichloroethene 4-Methyl-2-pentanone Tetrachloroethene 1,1,2,2-Tetrachloroethane RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	11/18/03, 09:20	P-58-DUP-2 RE P-54-267.95 RE P-54-DUP-2 RE P-54-276.4	% D: Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3K140242	11/20/03, 19:28	P-54-351.25 P-54-DUP-3 TB-11101113	% D: Bromomethane Methylene chloride Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	11/21/03, 09:28	P-54-351.25 DL P-54-DUP-3 DL	RRF: Bromomethane Acetone 2-Butanone	RRF < 0.05 R – all non-detect results J – all positive results
F3K210372	11/28/03, 19:01	P-52-EB-2 TB-11171120 EB-P-54-11-17 P-53-EB-11-20	% D: Bromomethane RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3K280120	12/03/03, 21:35	P-53-146.40 P-53-DUP-1 P-53-266.35 P-53-DUP-2 P-34-EB-1	% D: Bromomethane Methylene chloride RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***CCAL Date***	***Sample ID***	***Compounds***	***Action***
F3K280120 Cont'd	12/06/03, 14:00	P-34-139.55 P-34-DUP-1 P-34-224.55 P-34-234.55 P-34-244.55 P-34-DUP-2 P-34-254.55 P-34-264.55 P-34-284.55 P-34-294.55 P-34-304.50 TB-11201125	% D: Bromomethane Methylene chloride 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	12/08/03, 10:15	P-53-331.10 P-53-340.05 P-53-340.05 RE	% D: Bromomethane Methylene chloride Acetone 2-Butanone 2-Hexanone RRF: Bromomethane Acetone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3L050365	12/08/03, 10:15	P-34-324.50 P-34-334.50 TB-121124	% D: Bromomethane Methylene chloride Acetone 2-Butanone 2-Hexanone RRF: Bromomethane Acetone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F3L090146	12/15/03, 09:08	P-33-EB-1 P-33-159.6 TB-125128	% D: Methylene chloride 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	12/19/03, 19:33	P-33-169.6 P-33-179.6 P-33-DUP-1 P-33-189.6 P-33-198.1 P-33-214.6 P-33-224.6 P-53-426.75 P-53-480.90	% D: Methylene chloride RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	12/23/03, 16:38	P-53-480.90 RE		Not evaluated. See Section 3.2.4

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***CCAL Date***	***Sample ID***	***Compounds***	***Action***
F4A130259	01/20/04, 07:48	P-55-EB-1 P-55-EB-1 DL TB-01050112 P-31-190.40 P-31-190.40 RE P-31-DUP-1 P-31-DUP-1 RE P-55-DUP-1 P-55-154.55	% D: Methylene chloride Acetone 2-Butanone RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	01/21/04, 11:36	P-55-DUP-1 RE P-55-154.55 RE	% D: Bromomethane Chloroethane Carbon tetrachloride 1,1,1-Trichloroethane RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F4A150320	01/21/04, 11:36	P-55-164.55 P-55-174.55 P-55-186.15	% D: Bromomethane Chloroethane Carbon tetrachloride 1,1,1-Trichloroethane RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	01/22/04, 09:51	P-55-EB-2 TB-01120114	% D: 1,1,1-Trichloroethane 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	02/05/04, 11:12	P-55-EB-2 RE	% D: Chloromethane Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F4A300327	02/05/04, 11:12	TB-01220129 P-56-126.55 P-55-311.95	% D: Chloromethane Acetone RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	02/09/04, 19:16	P-55-DUP-2	% D: Methylene chloride Acetone trans-1,3-Dichloropropene RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	02/14/04, 19:25	P-55-311.95 RE	% D: Acetone Carbon tetrachloride 1,1,1-Trichloroethane 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Bromomethane Acetone 2-Butanone 4-Methyl-2-pentanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F4B130279	02/18/04, 08:20	P-32-174.35 P-32-DUP-1 P-32-224.35 P-32-234.35 P-32-241.01 P-32-251.77 P-32-259.35 P-32-269.35 TB-02110212	% D: Chloromethane Bromomethane Chloroethane Acetone Carbon tetrachloride 1,1,1-Trichloroethane 2-Butanone 4-Methyl-2-pentanone Xylenes 2-Hexanone RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***CCAL Date***	***Sample ID***	***Compounds***	***Action***
F4B130279 Cont'd	02/19/04, 09:18	P-32-269.35	% D: Bromomethane Dibromochloro-methane Bromoform RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F4B170134	02/18/04, 08:20	TB-020916	% D: Chloromethane Bromomethane Chloroethane Acetone Carbon tetrachloride 1,1,1-Trichloroethane 2-Butanone 4-Methyl-2-pentanone Xylenes 2-Hexanone RRF: Acetone 2-Butanone 4-Methyl-2-pentanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
	02/19/04, 09:18	P-32-279.35	% D: Bromomethane Dibromochloro-methane Bromoform RRF: Bromomethane Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results
F4B200226	02/26/04, 10:37	P-32-488.9	% D: Bromomethane Acetone Dibromochloro-methane Bromoform RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results J – all positive results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F4B200226 Cont'd	03.01/04, 09:19	P-32-DUP-3 TB-02090219	<u>% D:</u> Acetone 2-Butanone 4-Methyl-2-pentanone Xylenes (total) 2-Hexanone <u>RRF:</u> Acetone 2-Butanone 4-Methyl-2-pentanone	<u>%D > 20%</u> UJ – all non-detect results J – all positive results <u>RRF < 0.05</u> R – all non-detect results J – all positive results

Note:
DL Suffix – Indicates a secondary diluted sample reanalysis
RE Suffix – Indicates a reanalysis at the same dilution

3.2.10. Laboratory Method Blanks

In general, most laboratory method blanks contained trace levels of one or more common laboratory contaminants including acetone or methylene chloride. The corresponding sample results for the identified contaminants were revised to non-detect results if these results were "less than five times" (< 5 X) the method blank results for laboratory contaminants in accordance with the QAPP (GTEOSI, 2002). However, per National Functional Guidelines, common laboratory contaminants (methylene chloride, acetone, 2-butanone, and cyclohexane) criterion is "less than 10 times" (< 10 X) the method blank results. Most samples were affected by these qualification guidelines. A summary of the samples and compounds that were revised due to laboratory contamination are presented in Table 3-3.

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	*Sample ID*	*Compounds*	*Action*
F3C190235	TB-A	Acetone Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	TB-B	Acetone Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	MW-7	Acetone Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	MW-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	MW-11	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	MW-10	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	MW-9	Acetone	Revised result to "U" (non-detect)
	MW-6	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	MW-4	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	MW-8	Acetone	Revised result to "U" (non-detect)
	MW-DUP	Acetone	Revised result to "U" (non-detect)

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F3D290160	P-17-73.25	Acetone Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-17-92.25	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-17-223.1	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-FB-1	Acetone	Removed "B" qualifier. No need to qualify FB with MB
	P-F-86.48	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-1	Acetone Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	P-F-76.46	Acetone Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3E060217	P-27-89.75	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-27-DUP	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-27-99.75	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-27-139.75	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-28-87.02	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-28-97.02	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-28-147.02	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-28-207.02	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-2	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3E160130			None
F3E200165			None
F3E230179	P-E-292.28 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-E-292.28 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3E290170	P-D-97.05	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-15-79.65	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-15-79.65 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-15-89.65	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-15-99.65	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-15-109.65	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-15-119.65	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3F030298	P-D-77.05	Methylene chloride	Revise "B" qualifier to "U" to indicate non

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F3F120220	P-C-89.6	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-C-99.6	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-C-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3F170126	P-C-320.3	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-C-330.3	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-C-337.5	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-C-337.5 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-24-87.35	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-24-77.35	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-612-616	Chloromethane Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	P-C-FB	Methylene chloride	Removed "B" qualifier. No need to qualify FB with MB
	P-C-159.6	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-C-169.6	Methylene chloride	Revised result to "U" (non-detect)
F3F180192	TB-617	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	P-24-127.3	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-24-137.3	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-C-347.7	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3F200145	P-24-207.3 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-619	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	P-24-267.3	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3F260187	P-24-297.3	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-23-FB-1	Methylene chloride	Removed "B" qualifier. No need to qualify FB with MB
	P-23-180.1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-23-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-23-DUP-1 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-619625	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3G010309	P-23-239.8	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-23-252.0	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-23-262.0	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F3G010309 Cont'd	P-23A-286.96	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-23A-293.50	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-627630	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3G030162	TB-701702	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	P-23A-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-23A-347.6	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3G110205	P-25-EB-1 DL	Methylene chloride	Removed "B" qualifier. No need to qualify EB with MB
	P-25-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-35-EB-1	Methylene chloride	Removed "B" qualifier. No need to qualify EB with MB
	P-35-117.2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-35-177.2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-35-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-708710	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3G150156			None
F3G230216	P-H-EB-1	Methylene chloride	Removed "B" qualifier. No need to qualify EB with MB
	P-H-EB-1 RE	Methylene chloride	Removed "B" qualifier. No need to qualify EB with MB
	TB721722	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3G250374	P-H-106.8	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-42-202.7	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-42-DUP-1 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-42-DUP-1 DL RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-42-DUP-1 DL RE RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3G290207	P-H-351.65	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-42-217.2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-42-276.4	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-42-329.8	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-42-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-42-354.6	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-724728	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F3H060192	P-45-131.25	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-45-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3H080219	TB-805807	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3H130195	P-45-281.65	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-20-309.60	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-20-319.60	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-20-FB	Methylene chloride	Removed "B" qualifier. No need to qualify FB with MB
	TB-8-12	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	P-20-427.99	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-20-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3H180106	P-45-366.39	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-20-476.68	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	TB-0813	Acetone	Removed "B" qualifier. No need to qualify TB with MB
	TB-0813 RE	Acetone	Removed "B" qualifier. No need to qualify TB with MB
F3H210288			None
F3H220246	P-36-156.7	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-36-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-46-139.60	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3H270230	P-46-275.42	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-46-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-36A-282.0	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-36-136.7	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-37-284.4	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-37-304.8	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-37-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-821-824	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3I040177	P-44-99.3	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-44-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3I050189	P-44-149.8	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result

Table 3-3. *Evaluation of Laboratory Method Blank Results*			
Package Identification	***Sample ID***	***Compounds***	***Action***
F3I050189 Cont'd	TB-903904	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3I090305	P-44-215.5	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-44-215.5 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-44-229.2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-44-229.2 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-44-239.85	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-44-239.85 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-44-249.85 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-47-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-47-147.1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3I120107	P-44-339.8	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3I150101			None
F3I180259			None
F3I230231	P-29-310.2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-29-329.85	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-29-360.0	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-38-207.5	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-38-260.7 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-43-246.68	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-43-246.68 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-43-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-43-DUP-2 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-43-294.85	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-43-294.85 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-29-390.0	Carbon disulfide	Revise "B" qualifier to "U" to indicate non-detect result
F3I250196			None
F3J030259	P-30-89.50	Acetone Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-30-99.50	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-30-204.55	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F3J030259 Cont'd	P-30-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB1-930102	Acetone Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3J070236			None
F3J110172			None
F3J240204	P-50-109.90	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-50-119.90	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-50-129.90	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-50-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-50-139.90	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-50-149.90	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-49-114.3	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-49-124.3	Acetone Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-49-167.3	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-49-DUP-1	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	TB10211023	Acetone	Removed "B" qualifier. No need to qualify TB with MB
	P-51-117.78	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-51-127.78	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-49-EB-1	Acetone	Removed "B" qualifier. No need to qualify EB with MB
F3J290103	P-50-249.90	Acetone Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-50-267.44	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-50-309.90	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-50-EB-2	Acetone Methylene chloride	Removed "B" qualifier. No need to qualify EB with MB
	P-50-342.60	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-50-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-10231027	Acetone Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	P-49-269.3	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-49-269.3 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-49-340.8	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-49-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F3J290103 Cont'd	P-51-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-51-246.75	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F3J310287	P-51-301.12	Acetone Methylene chloride 1,4-Dichlorobenzene	Revise "B" qualifier to "U" to indicate non-detect result
	P-51-321.00	Acetone Methylene chloride 1,2-Dichlorobenzene	Revise "B" qualifier to "U" to indicate non-detect result
	P-51-327.85	Acetone Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-10271030	Acetone Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3K080109	P-54-107.55	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-54-107.55 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-52-EB-1	Methylene chloride	Removed "B" qualifier. No need to qualify EB with MB
	P-52-170.0	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-52-DUP-1 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-58-EB-1	Methylene chloride	Removed "B" qualifier. No need to qualify EB with MB
	P-58-159.65	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-58-DUP-1	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-114116	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3K110173	P-58-274.65	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-58-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-58-DUP-2 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-54-267.95	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-54-267.95 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-54-DUP-2	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-54-DUP-2 RE	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-54-276.4	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-1171110	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F3K140242			None
F3K210372	P-52-EB-2	Acetone	Removed "B" qualifier. No need to qualify EB with MB
	TB-11171120	Acetone	Removed "B" qualifier. No need to qualify TB with MB
F3K280120	P-34-139.55	Acetone	Revise "B" qualifier to "U" to indicate non-detect result

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F3K280120 Cont'd	P-34-DUP-1	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-34-224.55	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-34-234.55	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-34-244.55	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-34-DUP-2	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-34-254.55	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-34-264.55	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-34-284.55	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-34-294.55	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	P-34-304.50	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
	TB-11201125	Acetone	Removed "B" qualifier. No need to qualify TB with MB
F3L050365			None
F3L090146	P-33-EB-1	Chloromethane	Removed "B" qualifier. No need to qualify EB with MB
	P-33-159.6	Chloromethane	Revise "B" qualifier to "U" to indicate non-detect result
	TB-125128	Chloromethane	Removed "B" qualifier. No need to qualify TB with MB
F4A130259	P-55-DUP-1 RE	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	P-55-154.55 RE	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F4A150320	P-55-164.55	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-55-174.55	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-55-186.15	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-55-264.40 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-55-271.00 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-55-164.55 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-55-174.55 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-55-186.15 DL	Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
F4A300327	P-55-311.95	Acetone Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	TB-01220129	Acetone Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
	P-56-126.55	Acetone Methylene chloride	Revise "B" qualifier to "U" to indicate non-detect result
	P-55-311.95 RE	Bromomethane	Revise "B" qualifier to "U" to indicate non-detect result

Table 3-3. *Evaluation of Laboratory Method Blank Results*			
Package Identification	***Sample ID***	***Compounds***	***Action***
F4B130279	P-32-269.35	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
F4B170134	P-32-279.35	Acetone	Revise "B" qualifier to "U" to indicate non-detect result
F4B200226			None

Note:
DL Suffix – Indicates a secondary diluted sample reanalysis
RE Suffix – Indicates a reanalysis at the same dilution

3.2.11. Laboratory Control Sample Results

The laboratory analyzed a laboratory control sample (LCS) for each day of sample analysis. Most LCS percent recoveries were within the laboratory control limits for each of the batches. Generally, for recoveries substantially exceeding laboratory control limits, the associated data would be qualified as estimated ("J" or "UJ") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results are qualified as estimated; non-detects are not qualified; 2) if the percent recovery was below the lower control limit, both positive and non-detect results are qualified as estimated. For compounds that were slightly out, but were within the method default range of 70% to 130%, they were not qualified based on professional judgment. Table 3-4 shows the evaluation of LCS samples.

Table 3-4. *Evaluation of Laboratory Control Sample Results*				
Package Identification	***LCS Date and Time***	***Sample ID***	***Compound(s) Out***	***Action***
F3C190235	03/21/03, 16:56	N/A	Chloroform	None
	03/25/03, 11:00	N/A	1,2-Dichloroethane	None
F3D290160	05/05/03, 10:46	N/A	None	None
F3E060217	05/07/03, 10:29	N/A	1,2-Dichloroethane	None
		P-27-89.75 P-27-DUP P-27-99.75 P-27-139.75 P-28-87.02 P-28-97.02 P-28-147.02 P-28-207.02 TB-2	Methylene chloride	"J" (high %R) (result is biased high)
F3E160130 F3E200165	05/21/03, 10:37	N/A	None	None
F3E200165	05/22/03, 11:10	N/A	None	None
F3E230179	05/27/03, 11:04	N/A	None	None
	05/28/03, 10:12	N/A	None	None
F3E290170	06/02/03, 12:38	N/A	None	None
	06/03/03, 10:54	N/A	None	None

Table 3-4. *Evaluation of Laboratory Control Sample Results*

Package Identification	*LCS Date and Time*	*Sample ID*	*Compound(s) Out*	*Action*
F3F030298	06/60/03, 11:18	N/A	None	None
F3F120220	06/14/03, 01:13	P-C-89.6 P-C-99.6 P-C-DUP-1 TRIP BLANK	Toluene Tetrachloroethene	None
F3F170126	06/19/03, 13:54	N/A	None	None
	06/20/03, 12:24	P-C-337.5 DL	Chloromethane	None
F3F180192	06/20/03, 12:24	TB-617 P-24-127.3 P-24-137.3 P-C-347.7	Chloromethane	None
	06/23/03, 11:11	N/A	None	None
F3F200145	06/23/03, 11:11	N/A	None	None
	06/24/03, 19:57	N/A	None	None
F3F260187	06/30/03, 10:53	P-24-297.3 P-23-180.1 P-23-DUP-1	Acetone 1,2-Dichloroethane 1,1,2-Trichloroethane 1,1,2,2-Tetrachloroethane	None
		P-23-FB-1 P-23-DUP-1DL	Acetone 1,2-Dichloroethane 1,1,2-Trichloroethane 1,1,2,2-Tetrachloroethane	Acetone was detected, and therefore, is qualified as estimated, "J", with a high bias
		TB-619625	Acetone 1,2-Dichloroethane 1,1,2-Trichloroethane 1,1,2,2-Tetrachloroethane	Acetone and 1,2-Dichloroethane were detected, and therefore, are qualified as estimated, "J", with a high bias
F3F270132	07/02/03, 09:56	N/A	None	None
F3G010309	07/03/03, 11:15	P-23-239.8 P-23-252.0 P-23-262.0 P-23A-286.96 P-23A-293.50 TB-627630	Acetone trans-1,3-Dichloropropene Toluene	%R was above the recovery range. Acetone already qualified, where detected, and is biased high. Trans-1,3-Dichloropropene not detected, and not qualified. Toluene %R is high and is < 130, not qualified.
F3G030162	07/07/03, 17:22	N/A	None	None
F3G110256	07/14/03, 14:20	N/A	None	None
	07/15/03, 10:19	N/A	None	None
F3G150156	07/15/03, 23:30	N/A	None	None
F3G230216	07/21/03, 13:45	N/A	None	None
F3G250074	07/29/03, 10:14	N/A	None	None
	07/30/03, 11:55	N/A	None	None
F3G290207	07/31/03, 09:47	N/A	None	None

Table 3-4. *Evaluation of Laboratory Control Sample Results*

Package Identification	***LCS Date and Time***	***Sample ID***	***Compound(s) Out***	***Action***
F3H060192	08/11/03, 19:18	N/A	None	None
	08/12/03, 10:25	N/A	None	None
F3H080219	08/11/03, 19:18	N/A	None	None
F3H130195	08/14/03, 13:27	N/A	None	None
F3H180106	08/18/03, 15:29	N/A	None	None
F3H210288	08/24/03, 14:59	N/A	None	None
F3H220246	08/28/03, 00:15	N/A	None	None
	08/28/03, 10:36	N/A	None	None
F3H270230	08/28/03, 10:36	N/A	None	None
F3I040177	09/04/03, 13:29	N/A	None	None
	09/04/03, 20:22	N/A	None	None
F3I050189	09/05/03, 10:09	N/A	None	None
	09/09/03, 11:25	N/A	None	None
F3I090305	09/11/03, 10:02	N/A	None	None
	09/12/03, 10:23	N/A	None	None
F3I120107	09/13/03, 17:30	N/A	None	None
F3I150101	09/18/03, 10:40	N/A	None	None
	09/18/03, 19:27	N/A	None	None
F3I180259	09/21/03, 13:06	N/A	None	None
F3I230231	09/29/03, 11:42	P-29-EB-1 P-29-310.2 P-29-329.85 P-29-DUP-2 P-29-EB-2 P-29-360.0 TB-917922	Chloroethane 2-Butanone	"J" (low %R) (data are biased low). Note that chloroethane and 2-butanone have already been qualified by the initial and continuing calibrations.
	09/30/03, 09:59	P-38-186.3 P-38-207.5 P-38-216.3 P-38-260.7 P-38-260.7 RE P-43-246.68 P-43-246.68 RE P-43-DUP-2 P-43-DUP-2 RE P-43-294.85 P-43-294.85 RE P-29-390.0	Chloroethane	"J" (low %R) (data are biased low)
F3I250196	10/01/03, 10:45	N/A	None	None
	10/01/03, 19:35	N/A	None	None
F3J030259	10/06/03, 11:07	N/A	None	None
F3J070236	10/14/03, 11:10	N/A	None	None

Table 3-4. *Evaluation of Laboratory Control Sample Results*

Package Identification	***LCS Date and Time***	***Sample ID***	***Compound(s) Out***	***Action***
F3J110172	10/16/03, 10:37	N/A	None	None
	10/16/03, 22:45	N/A	None	None
F3J240204	10/31/03, 0656	N/A	None	None
	11/04/03, 1748	N/A	None	None
F3J290103	11/04/03, 17:48	N/A	None	None
	11/05/03, 03:49	N/A	None	None
	11/05/03, 11:43	N/A	None	None
F3J310287	11/07/03, 00:10	N/A	None	None
F3K080109	11/14/03, 12:16	N/A	None	None
	11/18/03, 11:07	N/A	None	None
F3K110173	11/14/03, 12:16	N/A	None	None
	11/18/03, 11:07	N/A	None	None
F3K140242	11/20/03, 20:57	N/A	None	None
	11/21/03, 10:50	N/A	None	None
F3K210372	11/28/03, 21:06	N/A	None	None
F3K280120	12/03/03, 23:56	N/A	None	None
	12/06/03, 15:34	P-34-139.55 P-34-DUP-1 P-34-224.55 P-34-234.55 P-34-244.55 P-34-DUP-2 P-34-254.55 P-34-264.55 P-34-284.55 P-34-294.55 P-34-304.50 TB-11201125	Acetone	"J" (high %R) (result is biased high)
	12/08/03, 12:01	N/A	None	None
F3L050365	12/08/03, 12:01	N/A	None	None
F3L090146	12/15/03, 11:17	N/A	None	None
	12/19/03, 23:19	N/A	None	None
F4A130259	01/14/04, 17:19	N/A	None	None
	01/20/04, 09:17	N/A	None	None
	01/21/04, 13:21	N/A	None	None
F4A150320	01/21/04, 13:21	N/A	None	None
	01/22/04, 11:32	N/A	Vinyl chloride	None (high %R but not detected in samples)
	01/28/04, 16:04	TB-01120114 RE	Acetone	"J" (high %R) (result is biased high)
	02/02/04, 15:10	N/A	None	None

Table 3-4. *Evaluation of Laboratory Control Sample Results*

Package Identification	***LCS Date and Time***	***Sample ID***	***Compound(s) Out***	***Action***
F4A150320 Cont'd	02/03/04, 08:19	N/A	None	None
	02/05/04, 11:35	N/A	None	None
F4A300327	02/05/04, 11:35	N/A	None	None
	02/10/04, 03:14	N/A	Chloromethane Vinyl chloride Bromomethane	None (high %R but not detected in associated samples)
	02/14/04, 20:08	N/A	None	None
F4B130279	02/18/04, 09:33	N/A	None	None
	02/19/04, 11:55	N/A	None	None
F4B170134	02/18/04, 09:33	N/A	None	None
	02/19/04, 11:55	N/A	None	None
F4B200226	02/26/04, 11:21	N/A	None	None
	03/01/04, 10:40	N/A	None	None

N/A = not applicable

3.2.12. Matrix Spike/Matrix Spike Duplicate Analyses

The MS/MSD analyses are designed to provide information about the effect of sample matrix on the sample preparation procedures and the measurement methodology. Data precision from the field sampling and the analytical techniques are also assessed. The following samples were analyzed for MS/MSD:

- SDG F3C190235: samples MW-6 and MW-10
- SDG F3E060217: sample P-27-199.75
- SDG F3E160130: sample P-26-231.25
- SDG F3E290170: sample P-D-107.05
- SDG F3F170126: sample P-C-169.6
- SDG F3F180192: sample P-C-347.7
- SDG F3F200145: samples P-24-DUP-1 and P-24-267.3
- SDG F3H220246: sample P-46-DUP-1
- SDG F3I090305: sample P-47-177.0
- SDG F3J240204: sample P-49-114.3
- SDG F3K280120: samples P-53-266.35 and P-34-304.50

Only the associated non-spiked MS/MSD samples were evaluated for qualification (unless a trend can be determined for all other samples within the SDG). Where recoveries exceeded laboratory control limits, the associated data were qualified as estimated ("J" or "UJ") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results were qualified as estimated; 2) if the percent recovery was below the lower control limit, both positive and non-detect results were qualified as estimated. No qualification of data is required when percent recoveries are above the upper control limit and the VOC results are non-detect. The following are non-conformances associated with MS/MSD analyses:

- There were no MS/MSD analyzed with SDGs F3D290160, F3E230179, F3F030298, F3F260187, F3F120220, F3F270132, F3G010309, F3G030162, F3G110256, F3G150156, F3G230216, F3G290207, F3H060192, F3H080219, F3H130195, F3H180106, F3H210288, F3H270230, F3G250374, F3I040177, F3I050189, F3I150101, F3I180259, F3I230231, F3I250196, F3J030259, F3J070236, F3J110172, F3J290103, F3J310287, F3K080109, F3K110173, F3L050365, F3L090146, F4A130259, F4A150320, F4B170134, and F4B200226; therefore, matrix effects on accuracy and precision of the samples could not be evaluated.

- SDG F3G110256: the MD/MSD was performed on laboratory water, as the LCS and LCS duplicate; they offer no information on matrix effects of the actual field samples. However, since the RPDs for acetone and methylene chloride were not within acceptance criteria, these compounds were qualified as estimated (J) for all associated samples.

- SDGs F3G250374, F3I150101, F3I250196, F3K080109, F3K110173, F4A130259, F4B130279, and F4B170134: the MD/MSDs were performed on laboratory waters, as the LCSs and LCS duplicates; they offer no information on matrix effects of the actual field samples.

- SDGs F3K140242, F3K210372, and F4A300327: the MS/MSDs were performed on samples from other clients of the laboratory. Matrix effect of the samples for accuracy and precision was not evaluated because those MS/MSDs offer no pertinent information on matrix effects of field samples from this project.

- SDG F4A150320: the MD/MSDs were performed on laboratory water, as LCSs and LCS duplicates; they offer no information on matrix effects of the actual field samples. However, since the RPDs for acetone, bromomethane, and carbon disulfide for some LCS pairs were not within acceptance criteria, these compounds were qualified as estimated (J) for all associated samples.

Table 3-5 shows the samples that were qualified as estimated due to MS/MSD percent recoveries exceeding criteria.

Table 3-5. *Evaluation of Matrix Spike/Matrix Spike Duplicate Sample Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F3C190235	MW-10	Trans-1,3-Dichloropropene	"UJ" (low % R) (result is estimated and biased low)
		Tetrachloroethene	None: sample concentration is much greater than spiking concentration
		Trichloroethene	"J" (high %R) (result is biased high)
F3C190235 Cont'd	MW-6	Chloroform	"J" (high %R) (result is biased high)
		Tetrachloroethene	None: sample concentration is much greater than spiking concentration
F3E060217	P-27-199.75	None	None
F3E160130 F3E200165	P-26-231.25	Bromomethane	None
F3E290170	P-D-107.05	Tetrachloroethene	"J" (low % R) (result is estimated and biased low)
F3F170126	P-C-169.6	Bromomethane	None, compound had been qualified "R" due to other QC criteria failure
F3F180192	P-C-347.7	None	None
F3F200145	P-24-DUP-1	None	None
	P-24-267.3	None	None
F3G110256	P-25-EB-1 DL	Methylene chloride	"J" (high RPD)
	P-35-EB-1	Methylene chloride	"J" (high RPD)
	TB-708710	Methylene chloride	"J" (high RPD)
F3H220246	P-46-DUP-1	None	None
F3I090305	P-47-177.0	Tetrachloroethene	"J" (high %R) (result is biased high)
F3J240204	P-49-114.3	None	None
F3K280120	P-53-266.35	None	None
	P-34-304.50	None	None
F4A150320	P-31-344.25 P-31-351.55 P-31-DUP-2 P-31-344.25 RE P-55-264.40 P-55-271.00 TB-01120114 RE	Bromomethane Acetone Carbon disulfide	"J" (high RPD)
	P-31-DUP-2 RE	Acetone	"J" (high RPD)

3.2.13. Field Duplicate Analyses

Blind field duplicate samples were collected and analyzed to assess the overall sampling and analytical technique's precision. By design, the laboratory was never made aware of which field samples the blind duplicates were associated with. The following samples were analyzed for field duplicates:

- SDG F3C190325: sample MW-DUP as a blind field duplicate of sample MW-3.
- SDG F3E060217: sample P-27-DUP as a blind field duplicate of sample P-27-99.75.
- SDG F3F120220: sample P-C-DUP-1 as a blind field duplicate of sample P-C-99.60.
- SDG F3F200145: sample P-24-DUP-1 as a blind field duplicate of sample P-24-167.3 and sample P-24-DUP-2 as a blind field duplicate of sample P-24-287.3.
- SDG F3F260187: sample P-23-DUP-1 as a blind field duplicate of sample P-23-180.1.
- SDG F3G030162: sample P-23A-DUP-1 as a blind field duplicate of sample P-23A-347.6.
- SDG F3G110256: sample P-25-DUP-1 as a blind field duplicate of sample P-25-179.7 and sample P-35-DUP-1 as a blind field duplicate of sample P-35-177.2.
- SDG F3G150156: sample P-25-DUP-2 as a blind field duplicate of sample P-25-275.8 and sample P-35-DUP-2 as a blind field duplicate of sample P-35-332.2.
- SDG F3G250374: sample P-H-DUP-2 as a blind field duplicate of sample P-H-206.55 and sample P-42-DUP-1 as a blind field duplicate of sample P-42-202.7.
- SDG F3G290207: sample P-42-DUP-2 as a blind field duplicate of sample P-42-329.8.
- SDG F3H060192: sample P-45-DUP-1 as a blink field duplicate of sample P-45-81.25.
- SDG F3H130195: sample P-20-DUP-2 is a blind field duplicate of sample P-20-427.99.
- SDG F3H180106: sample P-45-DUP-2 is a blind field duplicate of sample P-45-366.39.
- SDG F3H210288: sample P-37-DUP-1 is a blind field duplicate of sample P-37-119.95.
- SDG F3H220246: sample P-36-DUP-1 is a blind field duplicate of sample P-36-156.7 and sample P-46-DUP-1 is a blind field duplicate of sample P-46-139.60.
- SDG F3H270230: sample P-46-DUP-2 is a blind field duplicate of sample P-46-275.42 and sample P-37-DUP-2 is a blind field duplicate of sample P-37-304.8.
- SDG F3I040177: sample P-44-DUP-1 is a blind field duplicate of sample P-44-99.3.
- SDG F3I090305: sample P-47-DUP-1 is a blind field duplicate of sample P-47-147.1.
- SDG F3I120107: sample P-43-DUP-1 is a blind field duplicate of sample P-43-119.88.

- SDG F3I180259: sample P-29-DUP-1 is a blind field duplicate of sample P-29-109.5 and sample P-38-DUP-1 is a blind field duplicate of sample P-38-116.7.

- SDG F3I250196: sample P-38-DUP-3 is a blind field duplicate of sample P-38-381.3; however, the original sample P-38-381.3 was not collected for analysis. Therefore, the duplicate will be considered as the original sample, and the duplicate sample not collected.

- SDG F3I230231: sample P-29-DUP-2 is a blind field duplicate of sample P-29-329.85 and sample P-43-DUP-2 is a blind field duplicate of sample P-43-246.68.

- SDG F3J030259: sample P-30-DUP-1 is a blind field duplicate of sample P-30-204.55.

- SDG F3J070236: sample P-30A-DUP-2 is a blind field duplicate of sample P-30A-298.6 and sample P-18-DUP-1 is a blind field duplicate of sample P-18-156.65.

- SDG F3J110172: sample P-30A-DUP-3 is a blind field duplicate of sample P-30A-406.55 and sample P-18-DUP-2 is a blind field duplicate of sample P-18-247.65.

- SDG F3J240204: sample P-50-DUP-1 is a blind field duplicate of sample P-50-129.90 and P-49-DUP-1 is a blind field duplicate of sample P-49-167.3.

- SDG F3J290103: sample P-50-DUP-2 is a blind field duplicate of sample P-50-342.60; P-49-DUP-2 is a blind field duplicate of sample P-49-340.8; and P-51-DUP-2 is a blind field duplicate of sample P-51-246.75.

- SDG F3K080109: sample P-52-DUP-1 is a blind field duplicate of sample P-52-170.0 and P-58-DUP-1 is a blind field duplicate of sample P-58-159.65.

- SDG F3K110173: sample P-58-DUP-2 is a blind field duplicate of sample P-58-274.65 and P-54-DUP-2 is a blind field duplicate of sample P-54-267.95.

- SDG F3K140242: sample P-54-DUP-3 is a blind field duplicate of sample P-54-351.25.

- SDG F3K280120: sample P-53-DUP-1 is a blind field duplicate of sample P-53-146.40; P-53-DUP-2 is a blind field duplicate of sample P-53-266.35; P-34-DUP-1 is a blind field duplicate of sample P-34-139.55; and P-34-DUP-2 is a blind field duplicate of sample P-34-244.55.

- SDG F3L090146: sample P-33-DUP-1 is a blind field duplicate of sample P-33-169.6.

- SDG F4A130256: sample P-31-DUP-1 is a blind field duplicate of sample P-31-190.40; P-55-DUP-1 is a blind field duplicate of sample P-55-154.55.

- SDG F4A150320: sample P-31-DUP-2 is a blind field duplicate of sample P-31-351.55.

- SDG F4A300327: sample P-55-DUP-2 is a blind field duplicate of sample P-55-311.95.

- SDG F4B130279: sample P-32-DUP-1 is a blind field duplicate of sample P-32-174.35.

- SDG F4B200226: sample P-32-DUP-3 is a blind field duplicate of sample P-32-488.9.

An evaluation of the precision of the field sampling procedure (as well as the laboratory analysis procedure) was made based on the relative percent difference (RPD) calculated for the original and duplicate sample results. RPD calculations were made only when the results were above the laboratory reporting limits. The RPD values for all compounds were less than 30% (aqueous data evaluation criteria) with the following exception:

- SDG F3F260187: the RPD for trichloroethene is 35.6%. Therefore, trichloroethene is qualified as estimated, "J" or "UJ," for all field samples (excluding blanks) in this SDG.

- SDG F3G030162: the RPDs for tetrachloroethene and trichloroethene are 45.6% and 41.9%, respectively. Therefore, tetrachloroethene and trichloroethene are qualified as estimated, "J" or "UJ," for all field samples (excluding blanks) in this SDG.

- SDG F3G150156: acetone was detected in P-35-332.2 at the estimated concentration of 2.4 ug/L, but not in its duplicate, P-35-DUP-2. Therefore all acetone detections are qualified as estimated, "J."

- SDG F3G250374: sample P-42-DUP-1 was analyzed four separate times. It was discovered that the concentrations from the first and second analyses (different containers) was not similar. Both containers were re-analyzed again with the same conclusion. The concentrations from the second container appeared to have degraded substantially. The results from the first container (diluted and undiluted results hybridized) are used for the duplicate pair (duplicate with P-42-202.7) comparison. The RPD for tetrachloroethene is 41%. Therefore, tetrachloroethene is qualified as estimated, "J" or "UJ," for all field samples (excluding blanks) in this SDG.

- SDG F3G290207: the RPD for trichloroethene is 34.5%. Therefore, trichloroethene is qualified as estimated, "J" or "UJ," for all field samples (excluding blanks) in this SDG.

- SDG F3H060196: the RPD for acetone could not be calculated as it was not detected in the original sample (subsequently qualified as rejected) and detected in the duplicate sample at 3.3 ug/L (subsequently qualified as estimated). Therefore, acetone is qualified as estimated, "J" or "UJ," in the all field samples.

- SDG F3H180106: the RPDs for tetrachloroethene and trichloroethene are 66.7% and 67.9%, respectively. Therefore, tetrachloroethene and trichloroethene are both qualified as estimated, "J" or "UJ," in all field samples. However, due to sample receipt temperature at the laboratory, all detections were already qualified as estimated, "J," and all non-detects were already qualified as rejected, "R."

- SDG F3H210288: the RPDs for tetrachloroethene and trichloroethene are 83.6% and 66.7%, respectively. Therefore, tetrachloroethene and trichloroethene are both qualified as estimated, "J" or "UJ," in all field samples.

- SDG F3H270230: the RPDs for chloroform, tetrachloroethene, and trichloroethene are 36.4%, 32.9%, and 33.0%, respectively, for the P-46-DUP-2 duplicate pair. Other than the P-37 samples within this SDG, all other samples for this SDG are qualified as estimated, "J" or "UJ," for these three compounds. The P-37 samples within this SDG had an acceptable duplicate pair.

- SDG F3I040177: the RPDs for tetrachloroethene and trichloroethene are 76.0% and 76.0%, respectively. Therefore, tetrachloroethene and trichloroethene are both qualified as estimated, "J" or "UJ," in all field samples.

- SDG F3I090305: the RPD for tetrachloroethene is 48.3%. Therefore, tetrachloroethene is qualified as estimated, "J" or "UJ," in all field samples.

- SDG F3I230231: for samples P-29-DUP-2 and P-43-DUP-2, the RPDs for tetrachloroethene were 37.6% and 36.7%, respectively. Therefore, tetrachloroethene is qualified as estimated, "J" or "UJ," in all field samples. For sample P-43-DUP-2, the RPD for cis-1,2-dichloroethene and trichloroethene were 44.8% and 44.1%, respectively. Therefore, cis-1,2-dichloroethene and trichloroethene are qualified as estimated, "J" or "UJ," in all field samples.

- SDG F3J240204: the RPD for chloroform in sample P-49-167.3 is 58.1%. Therefore, chloroform is qualified as estimated, "J" or "UJ," in all field samples.

- SDG F3J290103: the RPD for tetrachloroethene and trichloroethene in sample P-49-DUP-2 is 83.0% and 82.2%, respectively. Therefore, tetrachloroethene and trichloroethene are qualified as estimated, "J" or "UJ," in all field samples, with the following exceptions. Tetrachloroethene for sample P-50-DUP-2 do not need to be qualified because its RPD is acceptable. Tetrachloroethene for sample P-50-DUP-2 do not need to be qualified because its RPD is acceptable. Tetrachloroethene and trichloroethene for sample P-51-DUP-2 do not need to be qualified because its RPDs are acceptable.

- SDG F3K080109: the RPD for chloroform in sample P-58-DUP-1 is 89.4%. Therefore, chloroform is qualified as estimated, "J" or "UJ," in all field samples, with the exception of sample P-52-DUP-1. The RPD for sample P-52-DUP-1 is acceptable.

- SDG F3K110173: the RPD for chloroform and tetrachloroethene in sample P-48-DUP-2 is 43.8% and 38.9%, respectively. Therefore, chloroform and tetrachloroethene are qualified as estimated, "J" or "UJ," in all field samples. The RPD for tetrachloroethene in sample P-54-DUP-2 was acceptable; however, tetrachloroethene was already qualified as estimated in this sample due to sample receipt problems.

- SDG F3K280120: the RPD for 1,1,1-trichloroethane in sample P-34-DUP-2 is 32.6%. Therefore, 1,1,1-trichloroethane is qualified as estimated, "J" or "UJ," in all field samples.

There were no field duplicates submitted with SDGs F3D290160, F3E160130, F3E200165, F3E230179, F3E290170, F3F030298, F3F170126, F3F180192, F3F270132, F3G010309, F3G230216, F3H080219, F3I050189, F3I150101, F3I250196, F3J310287, F3K210372, F3L050365, and F4B170134. It should be noted that QAPP requirements (GTEOSI, 2002) specified that a field duplicate sample be collected at a rate of one sample for every ten samples (collection rate of 10%). There were 55 field duplicates collected for the 256 field samples submitted (not including blank samples collected as QCs) for analysis. Therefore, the frequency is satisfied and field precision is considered to have been evaluated to the QAPP's requirements.

3.2.14. Trip Blanks, Field Blanks, and Equipment Blanks

Fifty-six trip blanks, 7 field blanks, and 29 equipment blanks were submitted for analysis. Many of the trip blanks that were submitted contained common contaminants, including acetone, methylene chloride, and toluene. Frequently, the field blanks and equipment blanks also contained acetone and other compounds. Revisions made on the affected target compound results were based on trip blank, field blank, and equipment blank contamination, in accordance with practices described in the validation guidance documents listed in Sections 1.2 and 3.2.10 (method blank contamination). It should be noted that the results for the trip blanks, field blanks, and equipment blanks were not revised with respect to the method blank's contamination; but the original result were retained to show data users the presence and concentrations of contamination that was used to qualify the project sample results. The laboratory's "B" qualifiers in the trip blanks, field blanks, and equipment blanks were removed. The contamination in the trip blanks, field blanks, and equipment blanks, like the project samples, is potentially attributable to contamination from sample collection techniques in the field, cross-contamination from samples during shipment, or contamination during the preparation and analysis of these QC samples (at the laboratory).

There was no field blank collected with SDGs F3E060217, F3E160130, F3E200165, F3E230179, F3E290170, and F3F030298; therefore, the field blank from SDG F3D290160 was used. There was no field blank collected with SDGs F3F120220, F3F180192, F3F200145, F3F270132, F3G010309, F3G030162, F3G110256, F3G150156, F3G230216, F3G290207, F3H060192, and F3H080219; therefore, the field blank from SDG F3F170126 was used. There was no field blank collected with SDGs F3H180106, F3H220246, F3H270230, F3I050189, F3I090305, and F3I150101; therefore, the field blank from SDG F3H130195 was used. There was no field blank collected with SDGs F3I230231; therefore, the field blank from SDG F3I180259 was used. There was no field blank collected with SDGs F3J030259, F3J070236, F3J110172, F3J240204, F3K080109, F3K110173, F3K140242, F3K280120, F3L050365, F3L090146, F4A150320, F4A300327, F4B130279, F4B170134, and F4B200226; therefore, the field blank from SDG F3I250196 was used.

Table 3-6 shows the samples and compounds that were qualified as non-detect, "U."

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F3C190235	MW-7	Acetone* Methylene Chloride*	Revised result to "U" (non-detect)
	MW-2	2-Butanone Methylene Chloride*	Revised result to "U" (non-detect)
	MW-11	2-Butanone Methylene Chloride* Toluene	Revised result to "U" (non-detect)
	MW-5	2-Butanone	Revised result to "U" (non-detect)
	MW-10	Methylene Chloride*	Revised result to "U" (non-detect)
	MW-9	Acetone*	Revised result to "U" (non-detect)
	MW-6	Acetone*	Revised result to "U" (non-detect)
	MW-4	Acetone*	Revised result to "U" (non-detect)
	MW-8	Acetone*	Revised result to "U" (non-detect)
	MW-DUP	Acetone*	Revised result to "U" (non-detect)
F3D290160	P-17-73.25	Acetone* 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-17-92.25	Acetone* Bromoform 1,2-Dichloroethane Toluene	Revised result to "U" (non-detect)
	P-17-233.1	Acetone* 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-F-86.48	Chloroform Methylene chloride*	Revised result to "U" (non-detect)
	P-F-76.46	Acetone* Methylene chloride*	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F3E060217	P-27-89.75	Acetone 1,2-Dichloroethane Toluene Methylene chloride*	Revised result to "U" (non-detect)
	P-27-DUP	Acetone 1,2-Dichloroethane Toluene Methylene chloride*	Revised result to "U" (non-detect)
	P-27-99.75	Acetone 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-27-139.75	Acetone Chloroform 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-27-199.75	Acetone Bromoform 1,2-Dichloroethane Toluene	Revised result to "U" (non-detect)
	P-28-87.02	Acetone 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-28-97.02	Methylene chloride*	Revised result to "U" (non-detect)
	P-28-147.02	Acetone Bromoform Methylene chloride*	Revised result to "U" (non-detect)
	P-28-207.02	Methylene chloride*	Revised result to "U" (non-detect)
F3E160130	P-26-231.25	Acetone Toluene Bromoform	Revised result to "U" (non-detect)
	P-26-241.25	Bromoform	Revised result to "U" (non-detect)
	P-E-98.57	Methylene chloride	Revised result to "U" (non-detect)
F3E200165	P-26-257.2	Bromoform Toluene	Revised result to "U" (non-detect)
	P-26-267.2	Acetone Toluene	Revised result to "U" (non-detect)
	P-26A-276.53	Chloromethane	Revised result to "U" (non-detect)
	P-E-128.57	Methylene chloride	Revised result to "U" (non-detect)
	P-E-138.57	Methylene chloride	Revised result to "U" (non-detect)
	P-E-148.57	Chloromethane	Revised result to "U" (non-detect)
	P-E-158.57	Chloromethane	Revised result to "U" (non-detect)
F3E230179	P-E-292.28	Chloroform Chloromethane	Revised result to "U" (non-detect)
	P-E-292.28 DL	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-E-301.23	Chloroform	Revised result to "U" (non-detect)
	P-E-301.23 DL	Acetone Methylene chloride*	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F3E230179 Cont'd	P-E-332.85	Chloroform	Revised result to "U" (non-detect)
	P-E-327.15	Chloroform	Revised result to "U" (non-detect)
F3E290170	P-D-87.05	Toluene Bromoform Carbon disulfide	Revised result to "U" (non-detect)
	P-D-97.05	Methylene chloride*	Revised result to "U" (non-detect)
	P-D-107.05	Carbon disulfide	Revised result to "U" (non-detect)
	P-15-79.65	Methylene chloride*	Revised result to "U" (non-detect)
	P-15-79.65 RE	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-15-89.65	Methylene chloride*	Revised result to "U" (non-detect)
	P-15-99.65	Methylene chloride*	Revised result to "U" (non-detect)
	P-15-109.65	Methylene chloride*	Revised result to "U" (non-detect)
	P-15-119.65	Methylene chloride*	Revised result to "U" (non-detect)
F3F030298	P-D-257.	Acetone 1,2-Dichlorobenzene	Revised result to "U" (non-detect)
	P-D-290.1	Acetone Chloroform 1,2-Dichlorobenzene	Revised result to "U" (non-detect)
	P-D-77.05	Methylene chloride*	Revised result to "U" (non-detect)
	P-D-117.05	Carbon disulfide	Revised result to "U" (non-detect)
	P-D-127.05	Bromoform Carbon disulfide	Revised result to "U" (non-detect)
	P-D-137.05	Acetone Toluene Carbon disulfide	Revised result to "U" (non-detect)
	P-D-147.05	Chloroform	Revised result to "U" (non-detect)
F3F120220	P-C-89.6	Methylene chloride*	Revised result to "U" (non-detect)
	P-C-99.6	Methylene chloride*	Revised result to "U" (non-detect)
	P-C-DUP-1	Methylene chloride*	Revised result to "U" (non-detect)
F3F170126	P-C-320.3	Methylene chloride*	Revised result to "U" (non-detect)
	P-C-330.3	Methylene chloride* Bromoform	Revised result to "U" (non-detect)
	P-C-337.5	Methylene chloride* Bromoform Carbon disulfide	Revised result to "U" (non-detect)
	P-C-337.5 DL	Methylene chloride*	Revised result to "U" (non-detect)
	P-24-87.35	Methylene chloride* Acetone	Revised result to "U" (non-detect)
	P-24-77.35	Methylene chloride* Carbon disulfide	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	*Sample ID*	*Compound*	*Action*
F3F170126 Cont'd	P-C-159.6	Methylene chloride* Chloroform Carbon disulfide	Revised result to "U" (non-detect)
	P-C-169.6	Methylene chloride* Chloroform Carbon disulfide	Revised result to "U" (non-detect)
F3F180192	P-24-127.3	Methylene chloride* Chloroform	Revised result to "U" (non-detect)
	P-24-137.3	Chloromethane Methylene chloride* Acetone	Revised result to "U" (non-detect)
	P-24-137.3 RE	Methylene chloride Acetone	Revised result to "U" (non-detect)
	P-C-347.7	Methylene chloride* Chloroform Tetrachloroethene	Revised result to "U" (non-detect)
F3F200145	P-24-157.3	Acetone Methylene chloride Tetrachloroethene	Revised result to "U" (non-detect)
	P-24-167.3	Acetone	Revised result to "U" (non-detect)
	P-24-177.3	Tetrachloroethene	Revised result to "U" (non-detect)
	P-24-187.3	Tetrachloroethene 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-24-197.3	Tetrachloroethene 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-24-207.3	Chloroform Tetrachloroethene 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-24-207.3 DL	Methylene chloride* Tetrachloroethene 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-24-217.3	Methylene chloride Tetrachloroethene	Revised result to "U" (non-detect)
	P-24-DUP-1	Methylene chloride	Revised result to "U" (non-detect)
	P-24-227.3	Methylene chloride 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-24-237.3	Tetrachloroethene	Revised result to "U" (non-detect)
	P-24-247.3	Methylene chloride Tetrachloroethene 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-24-257.3	Methylene chloride Tetrachloroethene 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-24-147.3	Tetrachloroethene	Revised result to "U" (non-detect)
	P-24-267.3	Methylene chloride* Tetrachloroethene	Revised result to "U" (non-detect)
	P-24-287.3	Tetrachloroethene	Revised result to "U" (non-detect)
	P-24-DUP-2	Tetrachloroethene	Revised result to "U" (non-detect)
	P-C-364.5	Chloroform	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F3F200145 Cont'd	P-C-374.5	Tetrachloroethene	Revised result to "U" (non-detect)
F3F260187	P-24-297.3	Methylene chloride* 1,1,1-Trichloroethane 4-Methyl-2-pentanone	Revised result to "U" (non-detect)
	P-23-180.1	Methylene chloride* Carbon disulfide	Revised result to "U" (non-detect)
	P-23-DUP-1	Methylene chloride*	Revised result to "U" (non-detect)
	P-23-DUP-1 DL	Methylene chloride* Acetone	Revised result to "U" (non-detect)
F3F270132	P-23-150.1	Methylene chloride Acetone Chloroform	Revised result to "U" (non-detect)
	P-23-160.1	Chloroform	Revised result to "U" (non-detect)
F3G010309	P-23-239.8	Carbon disulfide Methylene chloride* Tetrachloroethene Acetone	Revised result to "U" (non-detect)
	P-23-252.0	Bromoform Carbon disulfide Methylene chloride* Acetone	Revised result to "U" (non-detect)
	P-23-262.0	Carbon disulfide Methylene chloride*	Revised result to "U" (non-detect)
	P-23A-286.96	Carbon disulfide Methylene chloride* Chloroform	Revised result to "U" (non-detect)
	P-23A-293.50	Carbon disulfide Methylene chloride* Chloroform	Revised result to "U" (non-detect)
F3G030162	P-23A-DUP-1	Carbon disulfide Chloroform Methylene chloride*	Revised result to "U" (non-detect)
	P-23A-347.6	Chloroform Methylene chloride*	Revised result to "U" (non-detect)
F3G110256	P-25-169.7	Carbon disulfide Tetrachloroethene	Revised result to "U" (non-detect)
	P-25-179.7	Carbon disulfide Tetrachloroethene	Revised result to "U" (non-detect)
	P-25-DUP-1	Carbon disulfide Tetrachloroethene	Revised result to "U" (non-detect)
	P-35-117.2	Tetrachloroethene	Revised result to "U" (non-detect)
	P-35-177.2	Tetrachloroethene	Revised result to "U" (non-detect)
	P-35-DUP-1	Tetrachloroethene	Revised result to "U" (non-detect)
F3G150156	P-25-275.8	Trichloroethene	Revised result to "U" (non-detect)
	P-25-DUP-2	Carbon disulfide Trichloroethene	Revised result to "U" (non-detect)
	P-25-349.4	Tetrachloroethene	Revised result to "U" (non-detect)
	P-25-349.4 RE	Tetrachloroethene	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F3G150156 Cont'd	P-35-332.2	Tetrachloroethene	Revised result to "U" (non-detect)
	P-35-DUP-2	Tetrachloroethene	Revised result to "U" (non-detect)
F3G230216	P-H-116.8	Carbon disulfide	Revised result to "U" (non-detect)
F3G250374	P-H-106.8	Methylene chloride*	Revised result to "U" (non-detect)
	P-H-136.8	Carbon disulfide	Revised result to "U" (non-detect)
	P-H-156.8	Acetone	Revised result to "U" (non-detect)
	P-H-206.55	Carbon disulfide Chloromethane Tetrachloroethene	Revised result to "U" (non-detect)
	P-42-202.7	1,2-Dichlorobenzene Methylene chloride*	Revised result to "U" (non-detect)
	P-42-DUP-1	1,2-Dichlorobenzene	Revised result to "U" (non-detect)
	P-42-DUP-1	1,2-Dichlorobenzene Methylene chloride*	Revised result to "U" (non-detect)
	P-42-DUP-1	Methylene chloride*	Revised result to "U" (non-detect)
	P-42-DUP-1	Methylene chloride*	Revised result to "U" (non-detect)
	P-H-DUP-2	Carbon disulfide Chloromethane Tetrachloroethene	Revised result to "U" (non-detect)
F3G290207	P-H-351.65	Chloromethane Methylene chloride* Tetrachloroethene	Revised result to "U" (non-detect)
	P-42-217.2	Methylene chloride*	Revised result to "U" (non-detect)
	P-42-276.4	Methylene chloride*	Revised result to "U" (non-detect)
	P-42-329.8	Methylene chloride*	Revised result to "U" (non-detect)
	P-42-DUP-2	Methylene chloride*	Revised result to "U" (non-detect)
	P-42-354.6	Methylene chloride*	Revised result to "U" (non-detect)
F3H060192	P-20-149.60	Acetone	Revised result to "U" (non-detect)
	P-20-159.60	Acetone Tetrachloroethene	Revised result to "U" (non-detect)
	P-45-81.25	Carbon disulfide Tetrachloroethene	Revised result to "U" (non-detect)
	P-45-131.25	Carbon disulfide 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-45-DUP-1	Acetone Carbon disulfide Methylene chloride* Tetrachloroethene	Revised result to "U" (non-detect)
	P-45-DUP-1 RE	Acetone Carbon disulfide Tetrachloroethene	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	*Sample ID*	*Compound*	*Action*
F3H080219	P-20-229.70	Tetrachloroethene	Revised result to "U" (non-detect)
	P-45-151.25	Carbon disulfide 1,2-Dichlorobenzene	Revised result to "U" (non-detect)
	P-45-207.25	1,2-Dichlorobenzene	Revised result to "U" (non-detect)
F3H130195	P-45-281.65	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-20-309.60	Methylene chloride*	Revised result to "U" (non-detect)
	P-20-319.60	Acetone 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-20-427.99	Acetone Carbon disulfide Methylene chloride*	Revised result to "U" (non-detect)
	P-20-DUP-2	Carbon disulfide Methylene chloride*	Revised result to "U" (non-detect)
F3H180106	P-45-366.39	Acetone*	Revised result to "U" (non-detect)
	P-20-476.68	Acetone* 1,2-Dichloroethane	Revised result to "U" (non-detect)
F3H210288	P-37-119.95	Carbon disulfide	Revised result to "U" (non-detect)
	P-37-DUP-1	Carbon disulfide	Revised result to "U" (non-detect)
F3H220246	P-36-156.7	Methylene chloride*	Revised result to "U" (non-detect)
	P-36-DUP-1	Methylene chloride*	Revised result to "U" (non-detect)
	P-46-139.60	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-46-DUP-1	Acetone	Revised result to "U" (non-detect)
F3H270230	P-46-275.42	Methylene chloride*	Revised result to "U" (non-detect)
	P-46-DUP-2	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-36A-282.0	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-36-136.7	Carbon disulfide Methylene chloride*	Revised result to "U" (non-detect)
	P-37-284.4	Methylene chloride*	Revised result to "U" (non-detect)
	P-37-304.8	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-37-DUP-2	Methylene chloride*	Revised result to "U" (non-detect)
F3I040177	P-44-99.3	Acetone 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-44-DUP-1	Methylene chloride*	Revised result to "U" (non-detect)
F3I050189	P-44-149.8	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-44-149.8 DL	Acetone	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F3I090305	P-44-215.5	Carbon disulfide Methylene chloride*	Revised result to "U" (non-detect)
	P-44-215.5 DL	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-44-229.2	Methylene chloride*	Revised result to "U" (non-detect)
	P-44-229.2 DL	Methylene chloride*	Revised result to "U" (non-detect)
	P-44-239.85	Methylene chloride*	Revised result to "U" (non-detect)
	P-44-239.85 DL	Methylene chloride*	Revised result to "U" (non-detect)
	P-44-249.85	Acetone Carbon disulfide 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-44-249.85 DL	Acetone Carbon disulfide Methylene chloride*	Revised result to "U" (non-detect)
	P-44-257.1	Acetone Carbon disulfide	Revised result to "U" (non-detect)
	P-47-DUP-1	Methylene chloride*	Revised result to "U" (non-detect)
	P-47-147.1	Methylene chloride*	Revised result to "U" (non-detect)
	P-47-177.0	Acetone 1,2-Dichlorobenzene cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-47-205.7	Acetone 1,2-Dichlorobenzene cis-1,2-Dichloroethene	Revised result to "U" (non-detect)
F3I120107	P-43-119.88	Acetone Styrene	Revised result to "U" (non-detect)
	P-44-339.8	Methylene chloride*	Revised result to "U" (non-detect)
F3I150101	P-43-129.88	Methylene chloride	Revised result to "U" (non-detect)
	P-47-197.0	Acetone Methylene chloride	Revised result to "U" (non-detect)
F3I180259	P-29-109.5	Acetone	Revised result to "U" (non-detect)
	P-29-DUP-1	Acetone	Revised result to "U" (non-detect)
	P-38-146.7	Acetone	Revised result to "U" (non-detect)
F3I230231	P-38-216.3	Acetone	Revised result to "U" (non-detect)
F3I250196	P-38-DUP-3	Acetone cis-1,2-Dichloroethene Methylene chloride	Revised result to "U" (non-detect)
F3J030259	P-30-89.50	Acetone* Chloromethane Methylene chloride* Trichloroethene	Revised result to "U" (non-detect)
	P-30-99.50	Methylene chloride*	Revised result to "U" (non-detect)
	P-30-204.55	Methylene chloride*	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F3J030259 Cont'd	P-30-DUP-1	Methylene chloride*	Revised result to "U" (non-detect)
F3J070236	P-30A-298.6	Acetone 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-30A-DUP-2	1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-18-156.65	Acetone Trichloroethene	Revised result to "U" (non-detect)
	P-18-DUP-1	Acetone Trichloroethene	Revised result to "U" (non-detect)
F3J110172	P-30A-406.55	Acetone 1,2-Dichlorobenzene 1,3-Dichlorobenzene Methylene chloride	Revised result to "U" (non-detect)
	P-30A-DUP-3	Methylene chloride	Revised result to "U" (non-detect)
	P-18-217.65	Acetone Methylene chloride	Revised result to "U" (non-detect)
	P-18-247.65	Acetone Methylene chloride	Revised result to "U" (non-detect)
	P-18-DUP-2	Methylene chloride	Revised result to "U" (non-detect)
	P-18-257.65	Acetone	Revised result to "U" (non-detect)
	P-18-267.65	Acetone Trichloroethene	Revised result to "U" (non-detect)
	P-18-277.65	Acetone Trichloroethene	Revised result to "U" (non-detect)
	P-18-287.65	Acetone Trichloroethene	Revised result to "U" (non-detect)
	P-18-302.66	Acetone cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-18-335.80	Acetone	Revised result to "U" (non-detect)
F3J240204	P-50-109.90	1,2-Dichlorobenzene 1,2-Dichloroethane Trichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-50-119.90	1,2-Dichloroethane Trichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-50-129.90	1,2-Dichlorobenzene 1,2-Dichloroethane Trichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-50-DUP-1	1,2-Dichloroethane Trichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-50-139.90	1,2-Dichlorobenzene 1,2-Dichloroethane Trichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-50-149.90	1,2-Dichloroethane Trichloroethene Methylene chloride*	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*			
Package Identification	***Sample ID***	***Compound***	***Action***
F3J240204 Cont'd	P-49-114.3	Acetone* 1,2-Dichlorobenzene 1,2-Dichloroethane cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-49-124.3	Acetone* 1,2-Dichlorobenzene 1,2-Dichloroethane Trichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-49-167.3	Acetone* 1,2-Dichlorobenzene 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-49-DUP-1	Acetone* 1,2-Dichlorobenzene 1,2-Dichloroethane Toluene	Revised result to "U" (non-detect)
	P-51-117.78	1,2-Dichlorobenzene 1,2-Dichloroethane Trichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-51-127.78	Acetone* 1,2-Dichlorobenzene 1,2-Dichloroethane	Revised result to "U" (non-detect)
F3J290103	P-50-249.90	Acetone* Methylene chloride*	Revised result to "U" (non-detect)
	P-50-267.44	1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-50-309.90	cis-1,2-Dichloroehene Methylene chloride	Revised result to "U" (non-detect)
	P-50-342.60	1,2-Dichloroethane cis-1,2-Dichloroethene Methylene chloride* Trichloroethene	Revised result to "U" (non-detect)
	P-50-DUP-2	Acetone cis-1,2-Dichloroethene Methylene chloride* Trichloroethene	Revised result to "U" (non-detect)
	P-50-DUP-2 RE	cis-1,2-Dichloroethene	Revised result to "U" (non-detect)
	P-49-269.3	Acetone 1,2-Dichloroethane cis-1,2-Dichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-49-269.3 RE	Acetone cis-1,2-Dichloroethene Methylene chloride	Revised result to "U" (non-detect)
	P-49-284.3	Acetone	Revised result to "U" (non-detect)
	P-49-284.3 RE	Acetone	Revised result to "U" (non-detect)
	P-49-340.8	Methylene chloride*	Revised result to "U" (non-detect)
	P-49-DUP-2	Acetone 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-49-DUP-2 DL	Acetone cis-1,2-Dichloroethene	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	*Sample ID*	*Compound*	*Action*
F3J290103 Cont'd	P-51-187.78	Acetone 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-51-DUP-2	Acetone 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-51-246.75	1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
F3J310287	P-51-301.12	Acetone* 1,2-Dichloroethane Methylene chloride*	Revised result to "U" (non-detect)
	P-51-321.00	Acetone* cis-1,2-Dichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-51-327.85	Acetone* cis-1,2-Dichloroethene Methylene chloride*	Revised result to "U" (non-detect)
F3K080109	P-54-107.55	Acetone 1,4-Dichlorobenzene Methylene chloride*	Revised result to "U" (non-detect)
	P-54-107.55 DL	Acetone 1,4-Dichlorobenzene Methylene chloride* Trichloroethene	Revised result to "U" (non-detect)
	P-52-170.0	1,2-Dichlorobenzene Methylene chloride*	Revised result to "U" (non-detect)
	P-52-DUP-1	Acetone	Revised result to "U" (non-detect)
	P-52-DUP-1 RE	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-58-159.65	Methylene chloride*	Revised result to "U" (non-detect)
	P-58-DUP-1	Acetone Methylene chloride*	Revised result to "U" (non-detect)
F3K110173	P-58-274.65	1,2-Dichlorobenzene Methylene chloride* Trichloroethene	Revised result to "U" (non-detect)
	P-58-DUP-2	Acetone Methylene chloride* Trichloroethene	Revised result to "U" (non-detect)
	P-58-DUP-2 RE	Methylene chloride* Trichloroethene	Revised result to "U" (non-detect)
	P-54-267.95	Acetone 1,2-Dichlorobenzene Methylene chloride*	Revised result to "U" (non-detect)
	P-54-267.95 RE	Acetone 1,2-Dichlorobenzene Methylene chloride*	Revised result to "U" (non-detect)
	P-54-DUP-2	1,2-Dichlorobenzene Methylene chloride*	Revised result to "U" (non-detect)
	P-54-DUP-2 RE	Acetone 1,2-Dichlorobenzene Methylene chloride*	Revised result to "U" (non-detect)
	P-54-276.4	Acetone Chloroform 1,2-Dichlorobenzene Methylene chloride*	Revised result to "U" (non-detect)
F3K140242	P-54-351.25	Chloroform	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F3K140242 Cont'd	P-54-351.25 DL	cis-1,2-Dichloroethene Methylene chloride	Revised result to "U" (non-detect)
	P-54-DUP-3	Acetone Chloroform 1,2-Dichloroethane	Revised result to "U" (non-detect)
	P-54-DUP-3 DL	cis-1,2-Dichloroethene Methylene chloride	Revised result to "U" (non-detect)
F3K280120	P-53-146.40	Trichloroethene	Revised result to "U" (non-detect)
	P-53-DUP-1	Trichloroethene	Revised result to "U" (non-detect)
	P-53-266.35	cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-53-DUP-2	1,2-Dichloroethane cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-34-139.55	Acetone*	Revised result to "U" (non-detect)
	P-34-DUP-1	Acetone*	Revised result to "U" (non-detect)
	P-34-224.55	Acetone* Chloroform 1,2-Dichloroethane Trichloroethene	Revised result to "U" (non-detect)
	P-34-234.55	Acetone* Chloroform cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-34-244.55	Acetone* Chloroform cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-34-DUP-2	Acetone* Chloroform cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-34-254.55	Acetone* Chloroform cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-34-264.55	Acetone* Chloroform cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
	P-34-284.55	Acetone* Chloroform cis-1,2-Dichloroethene	Revised result to "U" (non-detect)
	P-34-294.55	Acetone* Chloroform cis-1,2-Dichloroethene	Revised result to "U" (non-detect)
	P-34-304.50	Acetone* Chloroform cis-1,2-Dichloroethene	Revised result to "U" (non-detect)
	P-53-331.10	cis-1,2-Dichloroethene	Revised result to "U" (non-detect)
	P-53-340.05	cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F3K280120 Cont'd	P-53-340.05 RE	cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
F3L050365	P-34-324.50	Acetone cis-1,2-Dichloroethene	Revised result to "U" (non-detect)
	P-34-334.50	Acetone cis-1,2-Dichloroethene Trichloroethene	Revised result to "U" (non-detect)
F3L090146	P-33-159.6	Chloromethane* Trichloroethene	Revised result to "U" (non-detect)
	P-33-169.6	Acetone Chloromethane Trichloroethene	Revised result to "U" (non-detect)
	P-33-179.6	Acetone Chloromethane Trichloroethene	Revised result to "U" (non-detect)
	P-33-DUP-1	Chloromethane Trichloroethene	Revised result to "U" (non-detect)
	P-33-189.6	Chloromethane Trichloroethene	Revised result to "U" (non-detect)
	P-33-198.1	Acetone Chloromethane Trichloroethene	Revised result to "U" (non-detect)
	P-33-214.6	Chloromethane	Revised result to "U" (non-detect)
	P-33-224.6	Chloromethane Trichloroethene	Revised result to "U" (non-detect)
	P-53-426.75	Acetone	Revised result to "U" (non-detect)
	P-53-480.90	Acetone Trichloroethene	Revised result to "U" (non-detect)
F4A130259	P-31-190.40	Acetone Chloroform Methylene chloride	Revised result to "U" (non-detect)
	P-31-190.40 RE	Chloroform Methylene chloride	Revised result to "U" (non-detect)
	P-31-DUP-1	Chloroform Toluene	Revised result to "U" (non-detect)
	P-31-DUP-1 RE	Chloroform Methylene chloride	Revised result to "U" (non-detect)
	P-55-DUP-1	1,4 Dichlorobenzene Tetrachloroethene	Revised result to "U" (non-detect)
	P-55-DUP-1 RE	Trans-1,2-Dichloroethene Methylene chloride* Tetrachloroethene	Revised result to "U" (non-detect)
	P-55-154.55	Trans-1,2-Dichloroethene Tetrachloroethene	Revised result to "U" (non-detect)
	P-55-154.55 RE	Methylene chloride* Tetrachloroethene	Revised result to "U" (non-detect)
F4A150320	P-31-344.25	Methylene chloride Toluene	Revised result to "U" (non-detect)
	P-31-344.25 RE	Methylene chloride Toluene	Revised result to "U" (non-detect)
	P-31-DUP-2 RE	Acetone	Revised result to "U" (non-detect)
	P-55-164.55	Acetone Methylene chloride* Toluene	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F4A150320 Cont'd	P-55-164.55 DL	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-55-174.55	Methylene chloride* Toluene	Revised result to "U" (non-detect)
	P-55-174.55 DL	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-55-186.15	Methylene chloride* Toluene	Revised result to "U" (non-detect)
	P-55-186.15 DL	Acetone Methylene chloride*	Revised result to "U" (non-detect)
	P-55-264.40	Methylene chloride	Revised result to "U" (non-detect)
	P-55-264.40 DL	Methylene chloride*	Revised result to "U" (non-detect)
	P-55-271.00	Methylene chloride	Revised result to "U" (non-detect)
	P-55-271.00 DL	Acetone Methylene chloride*	Revised result to "U" (non-detect)
F4A300327	P-55-311.95	Acetone* Chloromethane cis-1,2-Dichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-55-311.95 RE	Chloromethane cis-1,2-Dichloroethene	Revised result to "U" (non-detect)
	P-55-DUP-2	Acetone cis-1,2-Dichloroethene Methylene chloride*	Revised result to "U" (non-detect)
	P-56-126.55	Acetone* Chloroform Chloromethane Methylene chloride*	Revised result to "U" (non-detect)
F4B130279	P-32-174.35	Acetone 2-Butanone	Revised result to "U" (non-detect)
	P-32-DUP-1	Acetone 2-Butanone	Revised result to "U" (non-detect)
	P-32-224.35	Acetone 2-Butanone Chloroform	Revised result to "U" (non-detect)
	P-32-234.35	Acetone 2-Butanone Chloroform	Revised result to "U" (non-detect)
	P-32-241.01	Acetone 2-Butanone Chloroform Trichloroethene	Revised result to "U" (non-detect)
	P-32-251.77	Acetone 2-Butanone Chloroform Trichloroethene	Revised result to "U" (non-detect)
	P-32-259.35	Acetone 2-Butanone Chloroform Trichloroethene	Revised result to "U" (non-detect)
	P-32-269.35	Acetone* 2-Butanone Chloroform Trichloroethene	Revised result to "U" (non-detect)

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F4B170134	P-32-279.35	2-Butanone Chloroform Trichloroethene	Revised result to "U" (non-detect)
F4B200226	P-32-488.9	Acetone 2-Butanone Chloromethane	Revised result to "U" (non-detect)
	P-32-DUP-3	Acetone Bromomethane 2-Butanone Chloromethane	Revised result to "U" (non-detect)

Note:
DL Suffix – Indicates a secondary diluted sample reanalysis
RE Suffix – Indicates a reanalysis at the same dilution
* - Also qualified due to method blank contamination

3.2.15. System Monitoring Compounds

All percent recoveries for the VOC surrogates were within laboratory control limits with the following exceptions:

- SDG F3C190235: the 1,2-dichloroethane-d4 recovery for the LCS analyzed on 03/25/03 was at 80%, which is slightly below the control limits of 83% to 119%. No qualifications are necessary based on professional judgment.

- SDG F3D290160: 1,2-Dichloroethane-d4 for sample P-17-92.25 was at 120%, which is slightly above the control limits of 83% to 119%. No qualifications are necessary based on professional judgment.

- SDG F3E290170: samples TB-05-28-03 and P-15-79.65 both have one surrogate outside of control limits. However, both samples were reanalyzed with acceptable recoveries. The laboratory had submitted both sets of data for these samples – the lab only needed to submit the analysis that was acceptable. The data from the initial analyses are to be ignored.

- SDG F3F180192: the toluene-d8 recovery for sample P-24-137.3 was above the control limits of 85% to 116%. The laboratory reanalyzed the sample on the next day. All surrogate recoveries were within the control limits in the reanalysis. Both analysis results were submitted. However, only the "good" analysis needed to be submitted. With this validation, the reanalysis will be considered the initial and only analysis reported. No qualifications are necessary.

- SDGs F3F260187, F3F260187, F3F270132, F3G010309, F3G030162, F3G150156, F3G250374, F3G290207, F3H060192, F3H080219, F3H130195, F3H180106, F3H210288, F3H270230, F3I050189, F3I150101, F3I180259, F3I230231, F3I250196, F3J070236, F3J110172, F3J290103, F3K110173, F3L050365, F3L090146, F4A130259, F4A150320, F4B130279, F4B170134, and F4B200226: the surrogate limits specified on Form II (Surrogate Recovery) are not consistent with other SDGs or the laboratory's report forms for results. The limits on the report forms for results Form I) are used for this validation.

- SDG F3G150156: surrogate 4-bromofluorobenzene recovery for sample P-25-349.4 was above the acceptance limit. However, the laboratory had reanalyzed the sample with acceptable recoveries. The laboratory reported both analyses; however, only the reanalysis is to be reported.

- SDG F3G230216: surrogate toluene-d8 recovery for sample P-H-EB-1 was above the acceptance limit. However, the laboratory had reanalyzed the sample with acceptable recoveries. The laboratory reported both analyses; however, only the reanalysis is to be reported.

- SDG F3G250374: surrogate toluene-d8 recovery for sample P-42-DUP-1 was above the acceptance limit. Therefore, all detected results in this sample, between the bracketing internal standards fluorobenzene and chlorobenzene-d5, are qualified as estimated (J) with a high bias. The compounds qualified are trichloroethene and tetrachloroethene.

- SDG F3H060192: surrogate toluene-d8 recovery for sample P-45-DUP-1 was above the acceptance limit. However, the laboratory had reanalyzed the sample with acceptable recoveries. The laboratory reported both analyses; however, only the reanalysis is to be reported.

- SDG F3H180106: surrogate 4-bromofluorobenzene recovery for sample TB-0813 was above the acceptance limit. However, the laboratory had reanalyzed the sample with acceptable recoveries. The laboratory reported both analyses; however, only the reanalysis is to be reported.

- SDG F3I040177: the surrogate recovery sheet (Form II) was not included in the data package. The surrogate recoveries for all samples were reviewed on the sample results form instead (Form I). All recoveries were acceptable.

- SDG F3I090305: the 4-bromofluorobenzene recovery for sample P-47-177.0 was at 79%, which is slightly below the control limits of 82% to 118%. No qualifications are necessary based on professional judgment.

- SDG F3I120107: the surrogate recovery sheet (Form II) was not included in the data package. The surrogate recoveries for all samples were reviewed on the sample results form instead (Form I). All recoveries were acceptable.

- SDG F3I230231: surrogate dibromofluoromethane recovery for the five samples P-38-260.7, P-43-246.68, P-43-DUP-2, P-43-294.85, and P-29-390.0 were slightly above the acceptance limit of 83 to 125 percent. The first four samples were reanalyzed with similar results. The fifth sample was not reanalyzed. Since the recoveries were above the limit and not below, and since they were only slightly above the limit, no qualification actions are performed based on professional judgment. The reanalyzed sample results are chosen as the more accurate results in this validation review since the recoveries were closer to the acceptance limit. The four initial analyses are not to be used.

- SDG F3J240204: surrogate dibromofluoromethane recovery for sample P-50-109.90 was at 129%, which is slightly above the acceptance limits of 83% to 125%. No qualifications are necessary based on professional judgment.

- SDG F3J290103: surrogate 1,2-dichloroethane-d4 recoveries for samples P-49-269.3 and P-49-284.3 were slightly above the acceptance limit. However, the laboratory had reanalyzed the sample with acceptable recoveries. The laboratory reported both analyses; however, only the reanalysis is to be reported.

  Surrogate 1,2-dichloroethane-d4 recovery for sample P-50-DUP-2 was at 124%, which is slightly above the acceptance limits of 81% to 122%. The sample was reanalyzed with a respective recovery of 128%. However, the associated duplicate sample recoveries were all within the acceptance limits. No qualifications are necessary based on professional judgment. The initial P-50-DUP-2 analysis is to be reported.

- SDG F3K080109: the surrogate recovery sheet (Form II) was not included in the data package. The surrogate recoveries for all samples were reviewed on the sample results form instead (Form I). Surrogate recovery for 4-bromofluorobenzene was slightly below the recovery limits for sample P-54-107.55 DL. Therefore, the only result hybridized onto the original analysis from this sample, 1,2-dichlorobenzene, is qualified as estimated (J), biased low. Sample P-52-DUP-1 was analyzed twice due to a low surrogate recovery. Surrogate recovery for 4-bromofluorobenzene was slightly low on the first analysis. Surrogate recovery for 1,2-dichloroethane-d4 was slightly low on the second analysis. Since the results for the two analyses and their respective duplicate sample (surrogate recoveries were acceptable) were all similar, no qualifications are deemed necessary.

- SDG F3K110173: three samples were analyzed twice due to surrogate recovery problems. They are samples P-58-DUP-2, P-54-267.95, and P-54-DUP-2. The reanalysis of samples P-58-DUP-2 and P-54-DUP-2 are to be the reported analyses because the surrogate recoveries were all acceptable in the reanalyzed samples. The original analysis of sample P-54-267.95 is to be the reported analysis because the recovery or the surrogate dibromofluoromethane is closer to the recovery range than that of the reanalysis. The dibromofluoromethane recovery for sample P-54-267.95 was at 129%, which is slightly above the control limits of 83% to 125%. No qualifications are necessary based on professional judgment.

- SDG F3K280120: surrogate toluene-d8 recovery for sample P-53-340.05 was slightly above the acceptance limit. Subsequently, the laboratory reanalyzed the sample resulting with acceptable recoveries. The laboratory reported both analyses; however, only the reanalysis is to be reported.

- SDG F4A130259: surrogate recovery for 1,2-dichloroethane-d4 for most samples were slightly above the acceptance limit. In addition, surrogate recovery for 4-bromofluorobenzene for samples P-31-190.40 RE and P-55-DUP-1 was slightly above the acceptance limit. Since these recoveries were above the acceptance limit, and not below, no qualifications are necessary based on professional judgment.

- SDG F4A150320: surrogate toluene-d8 recovery for sample P-31-344.25 was slightly above the acceptance limit. Surrogate 1,2-dichloroethane-d4 for the following samples were slightly above the acceptance limit: P-55-164.55, P-55-174.55, P-55-186.15, P-55-EB-2, P-55-271.00, TB-01120114, and TB-01120114 RE. Since these recoveries were above the acceptance limit, and not below, no qualifications are necessary based on professional judgment.

- SDG F4A300327: surrogate recovery for 1,2-dichloroethane-d4 for samples P-55-311.95 and P-55-311.95 were slightly above the acceptance limit. In addition, surrogate recovery for 4-bromofluorobenzene for sample P-55-311.95 was slightly above the acceptance limit. Since these recoveries were above the acceptance limit, and not below, no qualifications are necessary based on professional judgment.

3.2.16. Internal Standards

All internal standard retention times were within ± 0.5 minutes from that of the associated calibration for all analyses. The responses of all internal standards were within the range of 50-200% of the associated calibration verification for all samples, with the following exception:

- SDG F3I230231: sample P-43-DUP-2 internal standard area responses were all less than 50 percent of the associated calibration. However, the laboratory had reanalyzed the sample with acceptable responses. The laboratory reported both analyses; however, only the reanalysis is to be reported.

- SDG F3K280120: internal standard area and retention time tabulations were not performed for seven samples on Form VIII. Tabulations are always reviewed to determine if these quality criteria are within control limits. In this case, information from the raw data was used to perform these evaluations during the data validation process. No qualifications are necessary.

- SDG F4A130259: there were many samples analyzed on January 20, 2004, which had internal standard area deficiencies. The internal standard area responses for the following samples were less than 50 percent of the associated calibration for 1,4-dichlorobenzene-d4: P-55-EB-1, P-55-EB-1 DL, P-31-DUP-1, P-31-DUP-1 RE, P-31-190.40, and P-31-190.40 RE. Therefore, all compounds quantitated under 1,4-dichlorobenzene-d4 (1,3-dichlorobenzene, 1,4-dichlorobenzene, and 1,2-dichlorobenzene) for these samples are qualified as estimated (J). In addition, for sample P-55-EB-1 DL, the internal standard responses for fluorobenzene and chlorobenzene-d5 were also less than 50 percent of the associated calibration. Therefore, all compounds in sample P-55-EB-1 DL are qualified as estimated (J).

3.2.17. Compound Identification and Quantitation of Results / Dilutions

The laboratory's evaluations of the gas chromatographs and mass spectra for the identified compounds were acceptable. The identification of acetone was difficult in most cases; however, based on professional judgment, the identification is deferred to the laboratory analyst. The laboratory analyst is familiar with the behavior of the instrumentation that they work with.

The following deficiencies were found:

- SDG F3F260187: sample TB-619625, total xylene as m,p-xylene was detected with a positive spectral match. It was not reported and has been added to the reporting form through this validation.

- SDG F3F270132: sample TB-625625, total xylene as m,p-xylene was detected with a positive spectral match. It was not reported and has been added to the reporting form through this validation.

- SDG F3G290207: samples P-42-DUP-2 and P-42-329.8, total xylene as o-xylene was detected with a positive spectral match. It was not reported and has been added to the reporting form through this validation.

- SDG F3H210288: chlorobenzene was listed as detected in sample TB 819820 at 0.12 ug/L. However, there was no supporting evidence of it's detection in the raw data, and therefore, is qualified as non-detected (U).

- SDG F3I040177: sample TB-902903, total xylene as m,p-xylene was detected with a positive spectral match. It was not reported and has been added to the reporting form through this validation.

- SDG F3I120107: sample TB-908910, spectral search hardcopy for 1,3-dichlorobenzene was not included in the data deliverable package. This is assumed to be an oversight, and the compound is believed to be detected, as the laboratory had indicated.

- SDG F3I230231: sample P-43-DUP-2 RE, total xylene as o-xylene was detected with a positive spectral match. It was not reported and has been added to the reporting form through this validation.

- SDG F3J290103: samples P-49-284.3 and P-51-187.78, total xylene as o-xylene was detected with a positive spectral match. It was not reported and has been added to the reporting form through this validation.

- SDG F3K280120: sample P-53-331.10, total xylene as o-xylene was detected with a positive spectral match. It was not reported and has been added to the reporting form through this validation.

- SDG F4A150320: samples P-55-164.55 DL and P-55-186 DL, total xylene as o-xylene was detected with a positive spectral match. It was not reported and has been added to the reporting form through this validation.

- SDG F4B200226: there were no internal laboratory spectral searches submitted for the detected target compounds for sample P-32-DUP-3. However, it was not necessary to review them for this sample because all detected compounds were previously qualified as non-detects, "U," due to contamination.

Many samples contained elevated concentrations of some target compounds that exceeded the calibration range for the VOC analysis. The laboratory reported and qualified these results with an "E" qualifier. As part of the laboratory's corrective action, the affected samples were reanalyzed at a dilution to obtain usable results within the established calibration curve range. As part of this validation, specific compound results, which exceeded the calibration range in the original analysis, were replaced with the compound results from the secondary dilution analysis. In addition, due to calibration conditions, which may qualify compounds as rejected, "R," results from the secondary analysis are substituted, where appropriate. The sample results, in effect, are made whole when the initial and secondary analyses are "hybridized," into one. A list of the re-analyzed samples and the affected compounds are listed in Table 3-7.

Table 3-7. *Summary of Laboratory Re-Analyses*

Package Identification	***Sample ID***	***Compound Reported From Re-Analysis***
F3C190235	MW-7	Tetrachloroethene
	MW-2	Acetone Tetrachloroethene
	MW-1	Acetone Tetrachloroethene
	MW-12	Acetone Tetrachloroethene
	MW-5	Acetone Tetrachloroethene
	MW-10	Acetone Tetrachloroethene
	MW-3	Acetone Tetrachloroethene
	MW-4	Tetrachloroethene
	MW-DUP	Tetrachloroethene
F3E230179	P-E-292.28	Acetone Tetrachloroethene
	P-E-301.23	Acetone Tetrachloroethene

Table 3-7. *Summary of Laboratory Re-Analyses*		
Package Identification	***Sample ID***	***Compound Reported From Re-Analysis***
F3F170126	P-C-337.5	Trichloroethene
F3F200145	P-24-207.3	1,1,1-Trichloroethane
F3F260187	P-23-DUP-1	Acetone Trichloroethene
F3G110256	P-25-EB-1	Carbon disulfide Methylene chloride
F3G250374	P-42-DUP-1	Tetrachloroethene
F3I050189	P-44-149.8	1,2-Dichlorobenzene cis-1,2-Dichloroethene Tetrachloroethene Trichloroethene
F3I090305	P-44-215.5	cis-1,2-Dichloroethene
	P-44-229.2	cis-1,2-Dichloroethene
	P-44-239.85	cis-1,2-Dichloroethene
	P-44-249.85	cis-1,2-Dichloroethene
F3J240204	P-50-109.90	Vinyl chloride
F3J290103	P-49-DUP-2	Tetrachloroethene Trichloroethene
F3K080109	P-54-107.55	1,2-Dichlorobenzene
F3K110173	P-58-DUP-2	Acetone
F3K140242	P-54-351.25	Tetrachloroethene
	P-54-DUP-3	Tetrachloroethene
F4A130259	P-31-EB-1	1,4-Dichlorobenzene 1,1-Dichloroethene
F4A150320	P-31-344.25	All compounds
	P-31-DUP-2	Acetone
	P-55-164.55	Bromomethane Chlorobenzene 1,2-Dichlorobenzene cis-1,2-Dichloroethene Trichloroethene Vinyl chloride
	P-55-174.55	Acetone Bromomethane Chlorobenzene 1,2-Dichlorobenzene cis-1,2-Dichloroethene Trichloroethene Vinyl chloride
	P-55-186.15	Acetone Bromomethane Chlorobenzene 1,2-Dichlorobenzene cis-1,2-Dichloroethene Tetrachloroethene Trichloroethene Vinyl chloride

Table 3-7. *Summary of Laboratory Re-Analyses*

Package Identification	***Sample ID***	***Compound Reported From Re-Analysis***
F4A150320 Cont'd	P-55-EB-2	2-Butanone Chloromethane cis-1,2-Dichloroethene 4-Methyl-2-Pentanone
	P-55-264.40	Tetrachloroethene Trichloroethene
	P-55-271.00	Acetone Tetrachloroethene Trichloroethene
	TB-01120114	Bromomethane 1,1,1-Trichloroethane

SDG: F3I090305: cis-1,2-dichloroethene in sample P-44-249.85 is also qualified as estimated ("J," biased low) because the secondary dilution value of 31 ug/L should not have required a dilution in the initial undiluted analysis. The initial calibration upper range for this compound is 40 ug/L.

The laboratory did not always perform initial analysis with no dilution. In many cases, the laboratory had diluted the samples without performing undiluted associated analysis. This has resulted in elevated detection limits for many samples. Table 3-8 lists the samples that were analyzed diluted without an undiluted analysis (X=times).

Table 3-8. *Summary of Samples Analyze Diluted Without an Undiluted Analysis*

Package Identification	***Sample ID***	***Initial Dilution***
F3D290160	P-F-86.48	20 X
	P-F-76.46	100 X
F3E060217	P-28-87.02	10 X
	P-28-97.02	5 X
F3E160130	P-E-98.57	2.5 X
F3E200165	P-E-128.57	100 X
	P-E-138.57	100 X
F3E290170	P-D-97.05	2 X
	P-15-79.65	10 X
	P-15-89.65	50 X
	P-15-99.65	500 X
	P-15-109.65	1000 X
	P-15-119.65	100 X
F3F030298	P-D-77.05	10 X
F3F120220	P-C-89.6	50 X
	P-C-99.6	5 X
	P-C-DUP-1	5 X

Table 3-8. *Summary of Samples Analyze Diluted Without an Undiluted Analysis*

Package Identification	***Sample ID***	***Initial Dilution***
F3F200145	P-24-217.3	5 X
	P-24-247.3	2.5 X
	P-24-257.3	2 X
F3F260187	P-23-180.1	2.5 X
	P-23-DUP-1	2 X
F3G110256	P-35-177.2	5 X
	P-35-DUP-1	2 X
F3G250374	P-H-106.8	10 X
	P-42-202.7	5 X
F3G290207	P-42-217.2	100 X
	P-42-276.4	20 X
	P-42-329.8	10 X
	P-42-DUP-2	5 X
	P-42-354.6	10 X
F3H060192	P-45-131.25	2 X
F3H130195	P-45-281.65	20 X
	P-20-309.60	50 X
	P-20-319.60	20 X
F3H220246	P-36-156.7	10 X
	P-36-DUP-1	10 X
F3H270230	P-46-275.42	2 X
	P-46-DUP-2	2 X
	P-36A-282.0	10 X
	P-37-284.4	50 X
	P-37-304.8	5 X
	P-37-DUP-2	5 X
F3I040177	P-44-99.3	20 X
	P-44-DUP-1	20 X
F3I050189	P-44-149.8	5 X
F3I090305	P-44-215.5	5 X
	P-44-229.2	10 X
	P-44-239.85	10 X
	P-47-DUP-1	5 X
	P-47-147.1	5 X
F3I120107	P-44-339.8	25 X
F3I150101	P-43-129.88	50 X

Table 3-8. *Summary of Samples Analyze Diluted Without an Undiluted Analysis*

Package Identification	***Sample ID***	***Initial Dilution***
F3I150101 Cont'd	P-47-197.0	5 X
F3I230231	P-29-310.2	2 X
	P-43-246.68	5 X
	P-43-DUP-2	5 X
	P-43-294.85	5 X
F3J030259	P-30-99.50	2.5 X
F3J240204	P-50-109.90	10 X
	P-50-119.90	100 X
	P-50-129.90	100 X
	P-50-DUP-1	100 X
	P-50-139.90	100 X
	P-50-149.90	100 X
	P-49-124.3	5 X
	P-51-117.78	5 X
	P-51-127.78	2.5 X
F3J290103	P-50-209.90	2.5 X
	P-50-342.60	10 X
	P-50-DUP-2	5 X
	P-49-269.3	2 X
	P-49-340.8	5 X
	P-49-DUP-2	2 X
	P-51-DUP-2	5 X
	P-51-246.75	10 X
F3J310287	P-51-321.00	10 X
	P-51-327.85	50 X
F3K080109	P-54-107.55	50 X
F3K110173	P-58-274.65	2.5 X
	P-58-DUP-2	2.5 X
	P-54-267.95	5 X
	P-54-DUP-2	5 X
	P-54-276.4	2.5 X
F3K280120	P-53-146.40	100 X
	P-53-DUP-1	100 X
	P-53-331.10	2 X

Table 3-8. *Summary of Samples Analyze Diluted Without an Undiluted Analysis*

Package Identification	***Sample ID***	***Initial Dilution***
F3K280120 Cont'd	P-53-340.05	10 X
F3L090146	P-53-480.90	2 X
F4A150320	P-55-264.40	10 X
	P-55-271.00	10 X
F4A300327	P-55-311.95 P-55-DUP-2	10 X 10 X

3.2.18. Tentatively Identified Compounds (TICs)

The laboratory was required to perform library searches for TICs present in the samples and QC matrices for the VOC analyses. Since the TIC evaluation provides only the identity of a possible compound in the matrix and not the actual concentration of a compound, all TIC data should be considered tentatively qualitative (i.e., not usable for quantitative purposes). The "N" qualifier was added to all TIC results to indicate to the data user that the compound identifications are tentative. The "J" qualifier was added to all TIC results to indicate to the data user that the values are estimated.

- SDG F3F180192: sample P-24-127.3, MTBE was detected with the target compounds (calibrated), but is not part of this project's compound list. Therefore, MTBE will be considered part of the TIC list; however, the identification is definitive (not tentative).

- SDG F3F272132: sample TB-625626, 1,1,2-trichlorofluoroethane was detected with the target compounds (calibrated) but is not part of this project's compound list. Therefore, 1,1,2-trichlorofluoroethane will be considered part of the TIC list; however, the identification is definitive (not tentative).

- SDG F3I050189: sample P-44-149.8, isopropylbenzene was detected with the target compounds (calibrated) but is not part of this project's compound list. Therefore, isopropylbenzene will be considered part of the TIC list; however, the identification is definitive (not tentative).

- SDG F3J290103: samples P-49-DUP-2, P-49-284.3, P-49-340.8, and P-51-187.78, 1,1,2-trichlorofluoroethane was detected with the target compound (calibrated) but is not part of this project's compound list. Therefore, 1,1,2-trichlorofluoroethane will be considered part of the TIC list; however, the identification is definitive (not tentative).

- SDG F3F310287: sample P-51-327.85, 1,1,2-trichlorofluoroethane was detected with the target compounds (calibrated) but is not part of this project's compound list. Therefore, 1,1,2-trichlorofluoroethane will be considered part of the TIC list; however, the identification is definitive (not tentative).

- SDG F3K280120: sample P-53-DUP-2, 1,2,4-trichlorobenzene was detected with the target compounds (calibrated) but is not part of this project's compound list. Therefore, 1,2,4-trichlorobenzene will be considered part of the TIC list; however, the identification is definitive (not tentative).

- SDG F4A150320: sample P-55-EB-2 RE, methyl-tert-butyl-ether was detected with the target compounds (calibrated) but is not part of this project's compound list. Therefore, methyl-tert-butyl-ether will be considered part of the TIC list; however, the identification is definitive (not tentative).

There were two isomers of ethyldimethylbenzene TIC detected in sample P-55-164.55. For tabulation, the two isomer values are combined and the compounds are listed once. There were two unknown benzene TICs detected in sample P-55-174.55. For tabulation, the two unknown benzene values are combined and the compounds are listed once. There were two isomers of ethylmethylbenzene TIC detected in sample P-55-186.15. For tabulation, the two isomer values are combined and the compounds are listed once.

- SDG F4A300327: sample P-53-311.95 RE, iodomethane was detected with the target compounds (calibrated) but is not part of this project's compound list. Therefore, iodomethane will be considered part of the TIC list; however, the identification is definitive (not tentative).

The TICs identified in the project and laboratory QC samples are tabulated for inclusion in tables in the associated Groundwater Investigation Report.

3.2.19. Electronic Data Deliverables

The results in electronic database, for most samples, matched results listed on the hardcopy analytical report including laboratory qualifiers. Since the electronic deliverables were received in Microsoft Access database formats and was subsequently transferred to Microsoft Excel spreadsheet tables for presentation, it was not determined where the error was. However, all discrepancies have been corrected for the data tables in the Groundwater Investigation Report and the Access database. The qualifiers and results were revised based on quality control issues, and foundation for changes are listed in previous sections of this DUSR. The qualifiers were also placed onto the reporting forms located near the beginning of each deliverable package (i.e., SDG package).

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 92.0 percent[8] of the VOC data (individual compound results) were determined to be usable for qualitative and quantitative purposes. The other 8.0 percent were qualified as rejected – the presence or absence of the compounds cannot be verified. Those sample results qualified as estimated, "J" and "UJ," due to data validation QC exceedances should be considered conditionally usable. TIC identifications are only presumptive evidence of the compound's presence, and are qualified with "N."

The samples collected from the Site were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, in the data validation guidelines listed in Section 1.2, in the QAPP (GTEOSI, 2002) established for this project, and by professional judgment[9]. Major deficiencies in the data generation process have resulted in some sample data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process have resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate, "J," indicates uncertainty in the reported concentration or detection limit of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters. Completeness has been discussed above.

Precision is measured through the evaluation of field duplicate samples. For the VOC analyses, none of the data were rejected due to precision non-conformances. The frequency of duplicates analysis is at 21.5 percent[10], which is above the QAPP's minimum requirement of 10 percent.

LCS, MS, and MSD recoveries indicate the accuracy of the data. For the VOC analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. There were some VOC data rejected due to representativeness non-conformances. Details are summarized within Section 3.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. Sensitivity requirements were not met for several project samples due to excessively poor compound responses in the initial and continuing calibrations performed. Most of the VOC data rejected were due to this sensitivity non-conformance.

[8] Value = (14,911 total target compound list data points – 1,192 rejected TCL data points) / 14,911 X 100

[9] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

[10] Value = (55 duplicate samples / 256 non-QC samples) X 100

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets Site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data packages. The following questions were addressed:

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

   The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis with the exception of some missing forms as discussed in Sections 3.2.1 and 3.2.5. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. *Have all holding times been met?*

   The holding times were met for almost all VOC samples. For those samples which were analyzed passed the holding time, the exceedances were not excessive and the results were qualified as estimated values, biased low. Holding time exceedances are discussed in Section 3.2.4.

3. *Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?*

   The laboratory used laboratory control limits. QC deviations and qualifications performed on the sample data are discussed in Section 3. Major non-conformances were observed with initial and continuing calibrations and with sample conditions upon receipt – 8.0 percent of all data were qualified as not usable.

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

   The QAPP required that USEPA guidance methods be used in the analysis of the samples. The laboratory used the required method. Some samples were diluted without first having performed undiluted analysis, thereby, increasing the reported detection limits.

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

   The evaluation of selected raw data confirmed all information provided in the data packages with the exception of minor errors. There were several samples where individual xylene compounds were identified in the raw data but the laboratory neglected to manually convert them to total-xylene, and therefore had not been reported. These errors were corrected in the data validation process.

6. *Have the correct data qualifiers been used?*

   The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines listed in Section 1. The validation qualifier definitions are listed in Section 2.2.

References

New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.

United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Organic Data Review.* EPA 540-R-99-008. October 1999.

United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.

United States Environmental Protection Agency, Region 2. *Contract Laboratory Program* Organics *Data Review.* SOP No. HW-6, Revision #12. March 2001.

United States Environmental Protection Agency, Region 2. *Standard Operating Procedure for the Validation of Organic Data Acquired Using SW-846 Method 8260B.* SOP No. HW-24, Revision #1. June 1999.

URS Corporation. *GTE Operations Support Incorporated - Groundwater Investigation Work Plan, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* QAPP: Appendix C. September 2002.

REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected at the former Sylvania Electric Products facility in Hicksville, New York (the Site). Sample collection activities were conducted by Malcolm Pirnie, Inc. (MPI) on March 15th and 16th, 2003.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for radiochemistry analyses including liquid scintillation counting for technetium-99 and alpha spectrometry for isotopic thorium and isotopic uranium using United States Department of Energy (USDOE) Methods and laboratory standard operating procedures (SOP's) and gas flow proportional counting for gross alpha, radium-226 and radium-228 using USEPA SW-846 Methods and laboratory SOP's. The analytical data generated for this investigation were evaluated by MPI using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the Science Applications International Corporation (SAIC) *Laboratory Data Validation Guidelines For Evaluating Radionuclide Analyses*, 143.-ARCS-00.08, Revision 06, 04 June 2000 and USDOE *Guidance For Radiochemical Data Validation,* Draft RD4, October 4, 1995.

The non-detect liquid scintillation counting results for technetium-99 (Tc-99) for samples MW-1 and MW-12 were qualified as rejected (R) because the net negative results have uncertainties less than their absolute values. This may be an indication of improper blank subtraction, per the data validation guidelines. Tc-99 was not detected in any of the groundwater samples. The affected data listed above was rejected (R) and therefore considered not usable.

Other method non-conformances requiring data validation qualification (J and UJ) include holding time, laboratory control sample recovery, laboratory duplicate analysis, matrix spike sample recovery, radionuclide identification and quantitation and blank contamination. None of these non-conformances were significant enough to jeopardize the usability of the data.

Overall, about 99 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J and UJ) due to data validation QA/QC exceedances should be considered conditionally usable and those sample results qualified as rejected (R) should be considered not usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples collected at the former Sylvania Electric Products facility in Hicksville, New York (the Site). Sample collection activities were conducted by Malcolm Pirnie, Inc. (MPI) on March 15th and March 16th, 2003.

The quantity and types of samples that were submitted for data validation are presented in Table 1-1.

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Date Collected***	***Client ID***	***Laboratory ID***	***Analysis Requested***
F3C190235	3/15/03	MW-7	F3C190235-003	Alpha, GFPC, LSC
	3/15/03	MW-2	F3C190235-004	Alpha, GFPC, LSC
	3/15/03	MW-1	F3C190235-005	Alpha, GFPC, LSC
	3/15/03	MW-11	F3C190235-006	Alpha, GFPC, LSC
	3/15/03	MW-12	F3C190235-007	Alpha, GFPC, LSC
	3/15/03	MW-5	F3C190235-008	Alpha, GFPC, LSC
	3/15/03	MW-10, MS/MSD	F3C190235-009	Alpha, GFPC, LSC
	3/15/03	MW-9	F3C190235-010	Alpha, GFPC, LSC
	3/16/03	MW-6	F3C190235-011	Alpha, GFPC, LSC
	3/16/03	MW-3 *	F3C190235-012	Alpha, GFPC, LSC
	3/16/03	MW-4	F3C190235-013	Alpha, GFPC, LSC
	3/16/03	MW-8	F3C190235-014	Alpha, GFPC, LSC
	3/15/03	MW-FB	F3C190235-015	Alpha, GFPC, LSC
	3/15/03	MW-DUP *	F3C190235-016	Alpha, GFPC, LSC

Notes:
Alpha indicates isotopic thorium or isotopic uranium by Alpha Spectroscopy GFPC indicates Gas-Flow Proportional Counting for gross alpha, radium-226 and radium -228.
LSC indicates Liquid Scintillation Analysis for technetium-99.
DUP indicates field duplicate, EB is equipment blank, and FB is field blank.
MS/MSD indicates Matrix Spike/Matrix Spike Duplicate.
* Indicates that field sampler identified blind field duplicate sample.

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report outlines deviations from the applicable QC criteria outlined in the following documents:

- GTE Operations Support Incorporated. (GTEOSI). *Soil Remediation Program Work Plan (QAPP: Appendix H), Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1*, Revision 2, October 2002.

- United States Department of Energy (USDOE). 1997. *Environmental Measurements Laboratory (EML) Procedures Manual, 28th Edition, Volume 1(HASL 300)*. New York, New York.

Deviations from the QA/QC criteria were qualified based on guidance provided in the following document:

- Science Applications International Corporation (SAIC). 2000. *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyzes*, 143-ARCS-00.08, Revision 06. Oak Ridge, Tennessee.

- United States Department of Energy (USDOE), October 4, 1995, *Guidance for Radiochemical Data Validation,* Draft RD4, Gaithersburg, Maryland.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for radiochemistry analyses including alpha spectrometry (thorium-228, thorium-230, thorium-232, uranium-234, uranium-235, and uranium-238) and liquid scintillation (technetium-99) using USDOE Methods and laboratory SOP's and gas-flow proportional counting (gross alpha, radium-226 and radium228) using USEPA SW-846 methods and laboratory SOP's. The methods used in this investigation are presented in Table 1-2.

Table 1-2. *Analytical Method References*

Parameter	***Method***	***Reference***
Liquid Scintillation Counting (technetium-99)	DOE TC-02-RC MOD	1
Gross Alpha by Gas-Flow Proportional Counting	SW-846 9310 MOD	3
Radium-226	SW-846 9315 MOD	3
Radium-228	SW-846 9320 MOD	3
Alpha Spectrometry (Thorium-228, -230, -232)	NAS/DOE 3004/RP (DOE RP-725)*	1, 2
Alpha Spectrometry (Uranium-234, -235, -238)	NAS/DOE 3050/RP (DOE RP-725)*	1, 2

Table 1-2. *Analytical Method References*
Notes: * Extraction Chromatography method used for analysis utilizes the same technology as the cited reference but includes proprietary techniques, more selective in separation of uranium and thorium from the matrix. Reference is for background information only. 1. United States Department of Energy (USDOE). October 1994. DOE Method for Evaluating Environmental and Waste Management Samples. 2. National Academy of Science (NAS). 3. USEPA SW-846. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, November 1986 and its updates.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. Specific QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Data completeness and usability are discussed in Section 4. Section 5 presents the Data Usability Summary Report (DUSR) Summary Information. A copy of the validated electronic deliverable data is summarized in Attachment A.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (GTEOSI, 2002), the analytical methodology, and the data validation guidelines referenced in Section 1 herein.

The following QA/QC parameters were evaluated for the radiochemistry (liquid scintillation, alpha spectrometry and gas-flow proportional counting) analyses (where applicable):

- Holding times and sample preservation;
- Calibration;
- Blank analysis:
- Tracer recovery;
- Laboratory Control Sample (LCS);
- Matrix Spike Sample (MS);
- Duplicate analysis;
- Field duplicate analysis;
- Radionuclide quantitation and detection limit evaluation;
- Chemical separation specificity (alpha spectrometry);
- System performance; and
- Documentation completeness.

2.2. Data Validation Qualifiers

The following guidelines are used regarding the assignment of qualifiers and the use of qualified data:

- QA/QC exceedances which do not result in the qualification of an analyte, or which result in additional qualification of the analyte with the same qualifier, are not discussed.

- The use of estimated analytical data for quantitative uses is consistent with the guidance presented in the *USEPA Risk Assessment Guidance for Superfund* (USEPA 1992).

The following qualifiers have been used in this data validation.

"J" The associated numerical value is an estimated quantity, due to a QC or statistical exceedance.

"UJ" The associated non-detect value is an estimated quantity, due to a QC or statistical exceedance.

"U" The associated value is non-detect.

"R" The associated non-detect or numerical value is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data (where applicable): blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes which QA/QC parameters specified in Section 2.1 met validation criteria, and which QA/QC parameters did not meet validation criteria. Samples requiring qualification are described in the following sections, and are identified by the description documented on the sample chain-of-custody records.

3.2. Liquid Scintillation Analyses (technetium-99)

3.2.1. Criteria

The QA/QC parameters presented in Section 2.1 were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Holding times and sample preservation;
- Calibration;
- Blank analysis;
- Tracer Recovery;
- Duplicate analysis;
- Field duplicate analysis;
- System performance; and
- Documentation completeness.

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.2.2. Radionuclide Quantitation and Detection Limits

The net negative results for several samples have uncertainties less than their absolute values. This may be an indication of improper blank subtraction, per SAIC data validation guidelines. Tc-99 was not detected in the groundwater samples. The affected data was rejected (R) as summarized in Table 3-1.

Table 3-1. *Evaluation of Negative Results versus Uncertainties for Liquid Scintillation Counting*

Sample ID	***Affected Radionuclide Results***	***Action***
MW-1, MW-12	Technetium-99	R

3.2.3. Laboratory Control Sample (LCS)

The percent recovery was greater than 120 percent for Tc-99 (151%) in the LCS, therefore the affected data was qualified estimated "J" as summarized in table 3-2.

Table 3-2. *Evaluation of Laboratory Control Sample for Tc-99*

Sample ID	*Affected Radionuclide Results*	*Action*
MW-7, MW-2, MW-1, MW-11, MW-12, MW-5, MW-10, MW-9, MW-6, MW-3, MW-4, MW-8, FB, MW-DUP	Technetium-99	J

3.2.4. Matrix Spike Sample (MS)

The percent recovery was greater than 120 percent for Tc-99 (144%) in the aqueous matrix spike sample, therefore the affected data was qualified estimated "J" as summarized in table 3-3. It should be noted that these results were previously qualified "J" due to LCS or rejected due to radionuclide quantitation and detection limits being out of criteria.

Table 3-3. *Evaluation of Matrix Spike Sample for Tc-99*

Sample ID	*Affected Radionuclide Results*	*Action*
MW-7, MW-2, MW-1, MW-11, MW-12, MW-5, MW-10, MW-9, MW-6, MW-3, MW-4, MW-8, FB, MW-DUP	Technetium-99	J

3.3. Alpha Spectrometry Analyses

3.3.1. Criteria

The QA/QC parameters presented in Section 2.1 for radiochemistry were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Holding times and sample preservation;
- Calibration;
- Tracer recovery;
- Laboratory Control Sample (LCS);
- Matrix Spike Sample (MS);
- Duplicate analysis;
- Chemical separation specificity;
- System performance; and
- Documentation completeness.

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.3.2. Blank Analysis

The field and laboratory blank results were evaluated using the following statistical approach: if the net blank result was not less than the associated uncertainty and if the sample result ± uncertainty was less than ten times the associated blank result ± uncertainty, the qualifier "J" was applied to the associated sample result. The statistical evaluation of the field and laboratory blank results is summarized in Table 3-4. The QAPP requires method blanks to be less than or equal to the minimum detected concentration (MDC) or less than 5 times the lowest sample activity. The method blanks were not always less than the lowest sample activity. The QAPP requires the laboratory to reanalyze the affected batch. This was not done by the laboratory.

Table 3-4. *Blank Evaluation for Thorium/Uranium Analyses.*

Blank ID	*Radionuclide*	*Blank Concentration ± Uncertainty (pCi/L)*	*Affected Samples*	*Action*
F3C200000-115B (laboratory blank)	Thorium-230	0.66 ± 0.27	MW-7, MW-2, MW-1, MW-11, MW-12, MW-5, MW-10, MW-9, MW-6, MW-3, MW-4, MW-8, MW-DUP	J
FB (Field Blank)	Thorium-230	1.14 ± 0.41	Same samples as laboratory blank (above)	J
FB (Field Blank)	Uranium-234	0.14 ± 0.14	MW-7, MW-11, MW-5, MW-10, MW-9, MW-6, MW-3, MW-4, MW-8, MW-DUP	J

Note:
pCi indicates picocurries
Uncertainty indicates total propagated uncertainty, which includes counting error and non-counting error.

3.3.3. Radionuclide Quantitation and Detection Limits

The net positive uranium-234 results for sample MW-7 and uranium-238 results for samples MW-DUP and FB were less than their uncertainties. This indicates that the sample counts were less than the critical values or less than 95% confidence of positive detection. The sample results were qualified as estimated (J), as summarized in Table 3-5.

Table 3-5. *Evaluation of Positive Results versus Uncertainties for Alpha Spectrometry Analyses*

Sample ID	*Affected Radionuclide Results*	*Sample Concentration ± Uncertainty (pCi/L)*	*Action*
MW-7	Uranium-234	0.10 ± 0.12	J
FB	Uranium-238	0.10 ± 0.12	J
MW-DUP	Uranium-238	0.11 ± 0.13	J

3.4. Gas-Flow Proportional Counting

3.4.1. Criteria

The QA/QC parameters presented in Section 2.1 were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Holding times and sample preservation;
- Calibration;
- Blank analysis;
- Matrix Spike Sample (MS)
- Duplicate analysis;
- Field duplicate analysis;
- Radionuclide quantitation and detection limits
- System performance; and
- Documentation completeness.

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.4.2. Laboratory Control Sample (LCS)

The percent recovery was less than 80 percent for radium 226 (73%) in the LCS, therefore the affected data was qualified estimated "J" as summarized in table 3-6.

Table 3-6. *Evaluation of Laboratory Control Sample*

Sample ID	***Affected Radionuclide Results***	***Action***
MW-7, MW-2, MW-1, MW-11, MW-12, MW-5, MW-10, MW-9, MW-6, MW-3, MW-4, MW-8, FB, MW-DUP	Radium-226	J

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 98.5 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J and UJ) due to data validation QA/QC exceedances should be considered conditionally usable and those results rejected (R) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria whereas the presence or absence of the analyte cannot be verified should be considered unusable.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI, 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration of the radionuclide, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PSARCC) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. For the radiochemistry analyses, none of the data were rejected due to precision non-conformances.

LCS recoveries indicate the accuracy of the data. For the radiochemistry analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. Technetium-99 was rejected in two samples due to net negative results having uncertainties less than their absolute value, which may be an indication of improper blank subtraction therefore technetium-99 was rejected in these two samples due to representativeness non-conformance.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. Sensitivity requirements were met for the sample data in this project. None of the radiochemistry data were rejected due to the sensitivity non-conformances.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. Have all holding times been met?

The holding times were met for the radiochemistry analyses.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

The laboratory used the laboratory control limits during the analyses performed for this sampling event. QA/QC deviations and qualifications performed on the sample data are discussed in Chapter 3. Major non-conformances were not detected for the radiochemistry data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USDOE methods are used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for the analyses performed for this sampling event, which met data user and client needs.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The evaluation of selected raw data confirmed information provided in the data packages.

6. Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines as listed in Section 1

References

GTE Operations Support Incorporated. (GTEOSI). 2002. *Soil Remediation Program Work Plan (QAPP: Appendix H), Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1*, Revision 2, October 2002.

O'Brien & Gere Engineers, Inc. 2000. *Supplement to the Approved Work Plan (QAPP – Appendix C), Former Sylvania Electric Products Incorporated Facility Cantiague Rock Road, Hicksville, New York.* Syracuse, New York.

Science Applications International Corporation (SAIC). 1992. *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyzes*, 143.-
ARCS-00.08, Revision 06. Oak Ridge, Tennessee.

United States Department of Energy (USDOE).1997. *Environmental Measurements Laboratory (EML) Procedures Manual(HASL-300),* 28th Edition, Volume 1. New York, New York.

United States Department of Energy(USDOE) 1995. *Guidance for Radiochemical Data Validation,* Draft RD4, Gaithersburg, Maryland.

United States Environmental Protection Agency (USEPA). 1992. *USEPA Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A),* 540/1-891002. Washington D.C.

ATTACHMENT A

VALIDATED DATA

REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected at the former Sylvania Electric Products facility in Hicksville, New York (the Site). Sample collection activities were conducted by Malcolm Pirnie, Inc. (MPI) from April 24, 2003 through February 9, 2004.

The samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for radiochemistry analyses including alpha spectrometry for isotopic thorium and isotopic uranium using United States Department of Energy (USDOE) Methods and laboratory standard operating procedures (SOP's) and gas flow proportional counting for gross alpha, radium-226 and radium-228 using USEPA SW-846 Methods and laboratory SOP's. The analytical data generated for this investigation were evaluated by MPI using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the Science Applications International Corporation (SAIC) *Laboratory Data Validation Guidelines For Evaluating Radionuclide Analyses*, 143-ARCS-00.08, Revision 06, June 2000 and the USDOE *Guidance for Radiochemical Data Balidation, Draft RD4, October 4, 1995.*

Method non-conformances requiring data validation qualification (J, U, or R) include holding time, laboratory control sample recovery, laboratory duplicate analysis, sample specific chemical recovery, radionuclide identification and quantitation and blank contamination. None of these non-conformances were significant enough to jeopardize the usability of the data.

Overall, 99 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J and UJ) due to data validation QA/QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples collected at the former Sylvania Electric Products facility in Hicksville, New York (the Site). Sample collection activities were conducted by Malcolm Pirnie, Inc. (MPI) from April 24, 2003 through February 9, 2004.

The quantity and types of samples that were submitted for data validation are presented in Table 1-1.

Table 1-1. *Sample Cross-Reference List*

Package Identification	*Date Collected*	*Client ID*	*Laboratory ID*	*Analysis Requested*
F3D290160:	4/24/03	P-17-82.25	F3D290160-002	Alpha, GFPC
	4/25/03	P-17-92.25	F3D290160-003	Alpha, GFPC
	4/28/03	P-F-86.48	F3D290160-007	Alpha, GFPC
F3E020153:	4/29/03	P-F-96.48	F3E020153-001	Alpha, GFPC
F3E060217:	5/3/03	P-27-89.75	F3E060217-001X	Alpha, GFPC
	5/3/03	P-27-99.75	F3E060217-003	Alpha, GFPC
	5/3/03	P-28-87.02	F3E060217-007	Alpha, GFPC
	5/3/03	P-28-97.02	F3E060217-008	Alpha, GFPC
F3E140308:	5/12/03	P-26-86.8	F3E140308-002	Alpha, GFPC
	5/12/03	P-26-96.8	F3E140308-003	Alpha, GFPC
F3E160130:	5/15/03	P-E-88.57	F3E160130-012	Alpha, GFPC
F3E200165:	5/15/03	P-E-98.57	F3E200165-007	Alpha, GFPC
F3E290170:	5/27/03	P-D-87.05	F3E290170-002	Alpha, GFPC
	5/27/03	1EB-5/27	F3E290170-003	Alpha, GFPC
	5/28/03	P-D-97.05	F3E290170-004	Alpha, GFPC
	5/28/03	P-15-89.65	F3E290170-012	Alpha, GFPC
	5/28/03	P-15-99.65	F3E290170-013	Alpha, GFPC
F3F12022 0:	6/10/03	P-C-89.60	F3F120220-002	Alpha, GFPC
	6/10/03	P-C-99.60	F3F120220-003	Alpha, GFPC
	6/10/03	P-C-DUP1 #1	F3F120220-012	Alpha, GFPC
F3F170126:	6/16/03	P-24-87.35	F3F170126-006	Alpha, GFPC
F3F180192:	6/16/03	P-24-97.5	F3F180192-002	Alpha, GFPC

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Date Collected***	***Client ID***	***Laboratory ID***	***Analysis Requested***
F3F260187:	6/24/03	P-23-FB1	F3F260187-002	Alpha, GFPC
	6/24/03	P-23-90.1	F3F260187-004	Alpha, GFOC
	6/24/03	P-23-100.1	F3F260187-005	Alpha, GFPC
F3G110256:	7/8/03	P-25-EB-1	F3G110256-001	Alpha, GFPC
	7/8/03	P-25-89.7	F3G110256-003	Alpha, GFPC
	7/9/03	P-25-99.7	F3G110256-004	Alpha, GFPC
	7/9/03	P-35-87.2	F3G110256-020	Alpha, GFPC
	7/9/03	P-35-97.2	F3G110256-021	Alpha, GFPC
F3G230216:	7/21/03	P-H-EB1	F3G230216-001	Alpha, GFPC
	7/21/03	P-H-86.8	F3G230216-003	Alpha, GFPC
	7/22/03	P-H-96.8	F3G230216-004	Alpha, GFPC
F3G250374:	7/23/03	P-42-89.6	F3G250374-022	Alpha, GFPC
	7/23/03	P-42-99.6	F3G250374-023	Alpha, GFPC
F3H060192:	8/4/03	P-20-89.60	F3H060192-002	Alpha, GFPC
	8/5/03	P-20-99.60	F3H060192-003	Alpha, GFPC
	8/4/03	P-45-81.25	F3H060192-011	Alpha, GFPC
	8/5/03	P-45-91.25	F3H060192-012	Alpha, GFPC
	8/4/03	P-45-DUP1	F3H060192-018	Alpha, GFPC
F3H210288:	8/19/03	P36-EB1	F3H210288-001	Alpha, GFPC
	8/19/03	P36-86.7	F3H210288-003	Alpha, GFPC
	8/19/03	P36-96.7	F3H210288-004	Alpha, GFPC
	8/19/03	P46-89.60	F3H210288-010	Alpha, GFPC
	8/20/03	P46-99.60	F3H210288-011	Alpha, GFPC
	8/19/03	P37-89.95	F3H210288-016	Alpha, GFPC
	8/19/03	P37-99.95	F3H210288-017	Alpha, GFPC
F3H280315:	8/26/03	P-46-330.21	F3H280315-008	Alpha, GFPC
	8/26/03	P-46-307.69	F3H280315-012	Alpha, GFPC
F3I040177:	9/2/03	P-44-89.8	F3I040177-003	Alpha, GFPC
	9/3/03	P-44-99.3	F3I040177-004	Alpha, GFPC
	9/3/03	P-44-DUP#1	F3I040177-005	Alpha, GFPC

Table 1-1. *Sample Cross-Reference List*

Package Identification	*Date Collected*	*Client ID*	*Laboratory ID*	*Analysis Requested*
	9/3/03	P-46-389.28	F3I040177-007	Alpha, GFPC
F3I050189:	9/4/03	P-47-87.08	F3I050189-010	Alpha, GFPC
F3I180259:	9/16/03	P-29-89.5	F3I180259-002	Alpha, GFPC
	9/16/03	P-29-99.5	F3I180259-004	Alpha, GFPC
	9/17/03	P-38-96.8	F3I180259-023	Alpha, GFPC
	9/17/03	P-38-86.7	F3I180259-024	Alpha, GFPC
F3I090305:	9/4/03	P-47-97.1	F3I090305-020	Alpha, GFPC
F3I120107:	9/9/03	P-43-89.88	F3I120107-003	Alpha, GFPC
	9/10/03	P-43-99.88	F3I120107-004	Alpha, GFPC
F3I230231:	9/20/03	P-29-310.2	F3I230231-014	Alpha, GFPC
	9/21/03	P-29-360.0	F3I230231-020	Alpha, GFPC
	9/22/03	P-29-390.0	F3I230231-044	Alpha, GFPC
F3J030259:	9/30/03	P-30-89.55	F3J030259-002	Alpha, GFPC
	10/1/03	P-30-99.55	F3J030259-003	Alpha, GFPC
F3J070236:	10/4/03	P-18-86.65	F3J070236-035	Alpha, GFPC
	10/5/03	P-18-96-65	F3J070236-036	Alpha, GFPC
F3J240204	10/21/03	P-50-89.90	F3J240204-004	Alpha, GFPC
	10/22/03	P-50-99.90	F3J240204-005	Alpha, GFPC
	10/21/03	P-49-84.25	F3J240204-017	Alpha, GFPC
	10/22/03	P-49-94.3	F3J240204-018	Alpha, GFPC
	10/22/03	P-51-87.78	F3J240204-030	Alpha, GFPC
	10/22/03	P-51-97.78	F3J240204-031	Alpha, GFPC
	10/22/03	P-51-DUP-1	F3J240204-032	Alpha, GFPC
F3K080109	11/4/03	P-54-87.55	F3K080109-002	Alpha, GFPC
	11/5/03	P-54-97.55	F3K080109-003	Alpha, GFPC
	11/5/03	P-52-90.0	F3K080109-016	Alpha, GFPC
	11/5/03	P-52-100.0	F3K080109-017	Alpha, GFPC
	11/4/03	P-58-89.65	F3K080109-029	Alpha, GFPC
	11/4/03	P-58-99.65	F3K080109-030	Alpha, GFPC
F3K110173:	11/7/03	P-58-304.65	F3K110173-005	Alpha, GFPC

Table 1-1. *Sample Cross-Reference List*

Package Identification	***Date Collected***	***Client ID***	***Laboratory ID***	***Analysis Requested***
	11/7/03	P-58-DUP-3	F3K110173-006	Alpha, GFPC
	11/9/03	P-58-402.40	F3K110173-010	Alpha, GFPC
	11/10/03	P-58-432.05	F3K110173-011	Alpha, GFPC
F3K210372:	11/18/03	P-53-86.40	F3K210372-011	Alpha, GFPC
	11/20/03	P-53-EB-11-20	F3K210372-012	Alpha, GFPC
F3K280120:	11/20/03	P-53-96.40	F3K280120-001	Alpha, GFPC
	11/21/03	P-34-89.55	F3K280120-027	Alpha, GFPC
	11/22/03	P-34-99.55	F3K280120-028	Alpha, GFPC
F3L090146:	12/05/03	P-33-89.6	F3L090146-003	Alpha, GFPC
	12/06/03	P-33-99.6	F3L090146-004	Alpha, GFPC
F4A130259:	1/5/04	P-31-89.25	F4A130259-003	Alpha, GFPC
	1/6/04	P-31-99.25	F4A130259-004	Alpha, GFPC
	1/11/04	P-55-84.10	F4A130259-021	Alpha, GFPC
	1/11/04	P-55-94.55	F4A130259-022	Alpha, GFPC
F4A230292:	1/21/04	P-56-86.55	F4A230292-006	Alpha, GFPC
	1/21/04	P-56-96.55	F4A230292-007	Alpha, GFPC
	1/22/04	P-56-DUP	F4A230292-019	Alpha, GFPC
F4B110140:	2/9/04	P-32-89.35	F4B110140-006	Alpha, GFPC
	2/9/04	P-32-99.35	F4B110140-007	Alpha, GFPC

Notes:
Alpha indicates Alpha Spectrometry of thorium (isotopic) and uranium (isotopic).
GFPC indicates Gas Flow Proportional Counting for gross alpha, radium 226 and radium 228.
Dup is duplicate, EB is equipment blank, and FB is field blank.

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report outlines deviations from the applicable QC criteria outlined in the following documents:

- GTE Operations Support Incorporated. (GTEOSI). *Soil Remediation Program Work Plan (QAPP: Appendix H), Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1*, Revision 2, October 2002.

- United States Department of Energy (USDOE). 1997. *Environmental Measurements Laboratory (EML) Procedures Manual, 28th Edition, Volume 1(HASL-300)*. New York, New York.

Deviations from the QA/QC criteria were qualified based on guidance provided in the following documents:

- Science Applications International Corporation (SAIC). June 2000. *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyses*, 143-ARCS-00.08, Revision 06. Oak Ridge, Tennessee.

- United States Department of Energy (USDOE). October 4, 1995, *Guidance for Radiochemical Data Validation,* Draft RD4, Gaithesrburg, Maryland.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for radiochemistry analyses including alpha spectrometry (thorium-228, thorium-230, thorium-232, uranium-234, uranium-235, and uranium-238) using USDOE Methods and laboratory SOP's and gas flow proportional counting (gross alpha, radium 226 and radium 228) using USEPA SW-846 methods and laboratory SOP's. The methods used in this investigation are presented in Table 1-2.

Table 1-2. *Analytical Method References*

Parameter	***Method***	***Reference***
Alpha Spectrometry (Uranium-234, Uranium-235 and Uranium –238)	DOE RP-725*	1
Radium-226 by GFPC	SW-846 9315 MOD	2
Radium-228 by GFPC	SW-846 9320 MOD	2
Alpha Spectrometry (Thorium-228, Thorium-230 and Thorium–232)	DOE RP-725*	1

Notes:
*Extraction Chromatography method used for analysis utilizes the same technology as the cited reference but includes proprietary techniques, more selective in separation of uranium and thorium from the matrix. Reference is for background information only.

1. United States Department of Energy (USDOE). October 1994. DOE Method for Evaluating Environmental and Waste Management Samples.
2. USEPA SW-846. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, November 1986 and its updates.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. Specific QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Data completeness and usability are discussed in Section 4. Section 5 presents the Data Usability Summary Report (DUSR) Summary Information. A copy of the validated electronic deliverable data is summarized in Attachment A.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (GTEOSI, 2002), the analytical methodology, and the data validation guidelines referenced in Section 1 herein.

The following QA/QC parameters were evaluated for the radiochemistry (alpha spectrometry and gas flow proportional counting) analyses (where applicable):

- Holding times and sample preservation;
- Calibration;
- Blank analysis:
- Tracer recovery;
- Laboratory Control Sample (LCS);
- Matrix Spike Sample (MS)
- Duplicate analysis;
- Field duplicate analysis;
- Radionuclide quantitation and detection limit evaluation;
- Chemical separation specificity (alpha spectrometry);
- System performance; and
- Documentation completeness.

It should be noted that no Matrix Spike samples were associated with these data. The field blind duplicates associated with these data are PC-99.60 associated with P-C-DUP #1; P-45-81.25 associated with P-45-DUP1; P-44-99.3 associated with P-44-DUP#1; P-51-DUP-1 associated with P-51-97.78; P58-304.65 associated with P-58-DUP-3; and P-56-86.55 associated with P-56-DUP.

2.2. Data Validation Qualifiers

The following guidelines are used regarding the assignment of qualifiers and the use of qualified data:

- QA/QC exceedances which do not result in the qualification of an analyte, or which result in additional qualification of the analyte with the same qualifier, are not discussed.

- The use of estimated analytical data for quantitative uses is consistent with the guidance presented in the *USEPA Risk Assessment Guidance for Superfund* (USEPA 1992).

The following qualifiers have been used in this data validation.

"J" The associated numerical value is an estimated quantity, due to a QC or statistical exceedance.

“UJ” The associated non-detect value is an estimated quantity, due to a QC or statistical exceedance.

“U” The associated value is non-detect.

“R” The associated non-detect or numerical value is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data (where applicable): blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes which QA/QC parameters specified in Section 2.1 met validation criteria, and which QA/QC parameters did not meet validation criteria. Samples requiring qualification are described in the following sections, and are identified by the description documented on the sample chain-of-custody records.

3.2. Alpha Spectrometry Analyses

3.2.1. Criteria

The QA/QC parameters presented in Section 2.1 for radiochemistry were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Holding times and sample preservation;
- Calibration;
- Field Duplicate Analysis;
- Chemical separation specificity;
- System performance; and
- Documentation completeness.

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.2.2. Blank Analysis

The field and laboratory blank results were evaluated using the following statistical approach: if the net blank result was not less than the associated uncertainty and if the sample result ± uncertainty was less than ten times the associated blank result ± uncertainty, the qualifier "J" was applied to the associated sample result. The statistical evaluation of the field and laboratory blank results is summarized in Table 3-1. The QAPP requires method blanks to be less than or equal to the minimum detected concentration (MDC) or less than 5 times the lowest sample activity. The method blanks were not always less than the lowest sample activity. The QAPP requires the laboratory to reanalyze the affected batch. The laboratory did not do this

Table 3-1. *Blank Evaluation for Thorium/Uranium Analyses.*

Blank ID	*Radionuclide*	*Blank Concentration ± Uncertainty (pCi/L)*	*Affected Samples*	*Action*
F3D290160:				
F3D0300000-110B	Thorium-230	0.48 ± 0.25	P-17-82.25, P-17-92.25, P-F-86.48	J
F3D300000-111B	Uranium-234	0.97 ± 0.50	P-17-82.25, P-17-92.25, P-F-86.48	J
F3E020153:				
F3E0200000-448B	Thorium-230	0.38 ± 0.22	P-F-96.48	J

Table 3-1. *Blank Evaluation for Thorium/Uranium Analyses.*

Blank ID	***Radionuclide***	***Blank Concentration ± Uncertainty (pCi/L)***	***Affected Samples***	***Action***
F3E0200000-452B	Uranium-234 Uranium-235	0.38 ±0.27 0.32 ±0.27	P-F-96.48	J
F3E60217:				
F3E070000-125B	Thorium-228 Thorium-230	0.13 ±0.12 0.94 ±0.37	P-27-89.75 P-27-99.75 P-28-87.02 P-28-97.02	J
F3E140308:				
F3E150000-239B	Thorium-228 Thorium-230	0.18±0.14 0.55 ± 0.27	P-26-86.8 P-26-96.8	J
F3E160130:				
F3E190000-133B	Thorium-230	0.45 ±0.25	P-E-88.57	J
F3E200165:				
F3E210000-111B	Thorium-230	0.22 ±0.16	P-E-98.57	J
F3E290170:				
F3E290000-420B 1EB-5/27	Thorium-230 Thorium-230	0.31 ±0.20 0.27 ± 0.20	P-D-87.05 P-D-97.05 P-15-89.65 P-15-99.65	J
F3E290000-421B	Uranium-234	0.12 ±0.12	P-D-87.05 P-D-97.05 P-15-89.65 P-15-99.65	J
F3F120220:				
F3F120220-139B	Thorium-230 Thorium-232	0.57 ± 0.28 0.14 ± 0.13	P-C-89.60, P-C-99.60, P-C-DUP1 #1	J
F3F170126				
F3F170126-371B F3F170126-369B	Thorium-230 Uranium-234	0.43 ± 0.25 0.25 ± 0.19	P-24-87.35	J
F3F180192:				
F3F190000-160B	Thorium-230	0.68 ± 0.32	P-24-97.35	J
F3F260187:				
F3F260000-381B	Thorium-230 Thorium-232	0.36 ± 0.21 0.084 ± 0.098	P-23-90.1 P-23-100.1	J
F3G110256:				
F3G140000-273B P-25-EB-1	Thorium-230 Thorium-230	0.20 ± 0.16 0.43 ± 0.23	P-25-89.7 P-25-99.7 P-35-87.2 P-35-97.2	J
F3G230216:				
F3G240000-557B P-H-EB1	Thorium-230 Thorium-230	0.62 ± 0.30 0.23 ± 0.17	P-H-86.8 P-H-96.8	J
F3G240374:				
F3G270000-105B	Thorium-230	0.40 ± 0.22	P-42-89.6 P-42-99.6	J
F3H060192:				

Table 3-1. *Blank Evaluation for Thorium/Uranium Analyses.*

Blank ID	***Radionuclide***	***Blank Concentration ± Uncertainty (pCi/L)***	***Affected Samples***	***Action***
F3H070000-257B	Thorium-230	0.39 ± 0.24	P-20-89.60 P-20-99.60 P-45-81.25 P-45-91.25 P-45-DUP1	J
F3H210288:				
F3H220000-114B	Thorium-230	0.57 ± 0.25	P36-86.7 P36-96.7 P46-89.60 P46-99.60 P37-89.95 P37-99.95	J
F3H280315:				
F3I020000-170B	Thorium-230	0.63 ± 0.33	P-46-330.21 P-46-307.69	J
F3I180259:				
F3I190000-260B F3I190000-259B	Uranium-234 Thorium-230	0.17 ± 0.13 0.64 ± 0.29	P-29-89.5 P-29-99.5 P-38-96.8 P-38-86.7	J
F3I090305:				
F3I120000-253B	Thorium-228	0.18 ± 0.15	P-47-97.1	J
F3I120107:				
F3I120000-253B	Thorium-228	0.18 ± 0.15	P-43-89.88 P-43-99.88	J
F3I230231:				
F3I240000-211B	Thorium-230	0.39 ± 0.23	P-29-310.2 P-29-360.0 P-29-390.0	J
F3J030259:				
F3J060000-164B	Thorium-230	0.43 ± 0.25	P-30-89.55 P-30-99.55	J
F3J060000-485B	Uranium-234	0.11 ± 0.10	P-30-89.55 P-30-99.55	J
F3J070236:				
F3J080000-223B	Thorium-230	0.57 ± 0.25	P-18-86.65 P-18-96.65	J
F3J240204:				
F3J270000-652B	Uranium-234 Uranium-238	0.21 ± 0.13 0.12 ± 0.10	P-50-89.90 P-50-99.90 P-49-84.25 P-49-94.3 P-51-87.78 P-51-97.78 P-51-DUP-1	J
F3K080109:				
F3K090000-092B	Thorium-230	0.17 ± 0.15	P-54-87.55 P-54-97.55 P-52-90.0 P-52-100.0 P-58-89.65 P-58-99.65	J
F3K110173:				

Table 3-1. *Blank Evaluation for Thorium/Uranium Analyses.*

Blank ID	*Radionuclide*	*Blank Concentration ± Uncertainty (pCi/L)*	*Affected Samples*	*Action*
F3K120000-272B	Thorium-230	0.17 + 0.15	P-58-304.65 P-58-DUP-3 P-58-402.40 P-58-432.05	J
F3K210372:				
F3K20000-098B P53-EB-11-20	Thorium-230 Thorium-230 Uranium-234	0.17 + 0.15 0.17 + 0.14 0.17 + 0.13	P-53-86.40	J
F3K280120:				
F3L040000-542B F3L010000-149B	Thorium-230 Uranium-238	0.31 + 0.20 0.080 + 0.093	P-53-96.40 P-34-89.55 P-34-99.55	J
F3L090146:				
F3L090000-348B	Thorium-230	0.22 + 0.17	P-33-89.6 P-33-99.6	J
F4A230292:				
F4A240000-097B	Thorium-230	0.32 + 0.21	P-56-86.55 P-56-96.55 P-56-DUP	J
F4B110140:	Thorium-230	0.27 + 0.18	P-32-89.35 P-32-99.35	J

Note:
pCi indicates picocurries
Uncertainty indicates total propagated uncertainty, which includes counting error and non-counting error.

3.2.3. Sample Specific Chemical Recovery

If the tracer recovery is less than 50 percent or greater than 100 percent then the qualifier “J” was applied to the associated sample results, as summarized in table 3-2.

Table 3-2. *Sample Specific Chemical Recovery*

Sample ID	*Affected Radionuclide Results*	*Action*
F3D290160:		
P-17-82.25	Uranium 234, -235, -238	J
F3D290170:		
P-D-87.05	Uranium 234, -235, -238	J
F3G230216:		
P-H-EB1	Uranium-234 Uranium-235 Uranium-238	J
F3G250374:		
P-42-89.6 P-42-99.6	Uranium-234 Uranium-235 Uranium-238	J
F3I040177:		

Table 3-2. *Sample Specific Chemical Recovery*		
Sample ID	***Affected Radionuclide Results***	***Action***
P-44-99.3	Thorium-228 Thorium-230 Thorium-232	J

It should be noted that the laboratory mistakenly did not spike the original sample F3E060217-001 resulting in no tracer recovery, therefore the duplicate results (sample F3E060217-001X), which showed good tracer recovery were reported, however no laboratory duplicate results were available for QA /QC for the samples in group F3E060217.

It should be noted that Uranium-234 was also previously qualified "J" in sample P-D-87.05 due to method blank contamination.

It should be noted that Thorium-230 was also previously qualified "J" in sample P-44-99.3 due to high LCS recovery.

3.2.4. Laboratory Control Sample (LCS)

If the percent recovery is less than 80 percent or greater than 120 percent in the LCS then the qualifier "J" was applied to the associated sample results, as summarized in table 3-3.

Table 3-3. *Evaluation of Laboratory Control Sample*		
Sample ID	***Affected Radionuclide Results***	***Action***
F3D290160:		
P-17-82.25, P-17-92.25, P-F-86.48	Uranium-238	J
F3F120220:		
P-C-89.60, P-C-99.60, P-C-DUP1 #1	Thorium-230	J
F3F170126:		
P-24-87.35	Thorium-230	J
F3F180192:		
P-24-97.35	Thorium-230	J
F3F260187:		
P-23-FB1 P-23-90.1 P-23-100.1	Thorium-230	J
F3G110256:		
P-25-EB-1 P-25-89.7 P-25-99.7 P-35-87.2 P-35-97.2	Thorium-230	J

Table 3-3. *Evaluation of Laboratory Control Sample*		
Sample ID	***Affected Radionuclide Results***	***Action***
F3G230216:		
P-H-EB1 P-H-86.8 P-H-96.8	Thorium-230	J
F3G250374:		
P-42-89.6 P-42-99.6	Thorium-230 Uranium-234	J
F3H210288:		
36-EB1 P36-86.7 P36-96.7 P46-89.60 P46-99.60 P37-89.95 P37-99.95	Thorium-230	J
F3I040177:		
P-44-89.8 P-44-99.3 P-44-DUP#1 P-46-389.28	Thorium-230	J
F3I050189:		
P-47-87.08	Thorium-230	J
F3I180259:		
P-29-89.5 P-29-99.5 P-38-96.8 P-38-86.7	Thorium-230	J
F3I120107:		
P-43-89.88 P-43-99.88	Thorium-230	J
F3I230231:		
P-29-310.2 P-29-360.0 P-29-390.0	Thorium-230	J
F3J070236:		
P-18-86.65 P-18-96.65	Thorium-230	J
F3J240204:		
P-50-89.90 P-50-99.90 P-49-84.25 P-49-94.3 P-51-87.78 P-51-97.78 P-51-DUP-1	Thorium-230	J
F3K080109:		

Table 3-3. *Evaluation of Laboratory Control Sample*		
Sample ID	***Affected Radionuclide Results***	***Action***
P-54-87.55 P-54-97.55 P-52-90.0 P-52.100.0 P-54-89.65 P-54-99.65	Thorium-230	J
F3K210372:		
P-53-86.40 P-53-EB-11-20	Thorium-230	J
F3K280120:		
P-53-96.40 P-34-89.55 P-34-99.55	Thorium-230	J
F3L090146:		
P-33-89.6 P-33-99.6	Thorium-230	J
F4A230292:		
P-56-86.55 P-56-96.55 P-56-DUP	Thorium-230	J
F4A130259:		
P-31-89.25 P-31-99.25 P-55-84.10 P-55-94-.55	Thorium-230	J
F4B110140:		
P-32.89.35 P-32-99.35	Throium-230	J

It should be noted that Thorium-230 was also previously qualified “J” in samples P-C-89.60, P-C-99.60, P-C-DUP1 #1, P-24-87.35, P-24-97.35, P-23-90.1, P-23-100.1, P-25-89.7, P-25-99.7, P-35-87.2, P-35-97.2, P-H-86.8, P-H-96.8, P-42-89.6, P-42-99.6, P36-86.7, P36-99.7, P46-89.60, P46-99.60, P37-89.95, P37-99.95, P-44-99.3, P-29.89.5, P-29-99.5, P-38-96.8, P-38-86.7, P-29-310.2, P-29-360.0, P-29-390.0, P-18-86.65, P-18-96.65, P-54-87.55, P-54-97.55, P-52-90.0, P-52-100.0, P-54-89.65, P-54-99.65, P-53-86.40, P-53-96.40, P-34-89.55, P-34-99.55, P-33-89.6, P-33-99.6, P-56-86.55, P-56-96.55, P56-DUP, P-32-89.35 and P-32-99.35 due to blank contamination.

It should be noted that Uranium-234 was previously qualified “J” in samples P-42-89.6 and P-42-99.6 due to poor tracer recovery.

3.2.5. Duplicate Analysis

If the Duplicate Error Ratio (DER) is greater than one (1) when comparing laboratory or field duplicate samples then the qualifier of “J” was applied to the associated sample results, as summarized in table 3-4.

Table 3-4. *Evaluation of Duplicate Analysis*

Sample ID	***Affected Radionuclide Results***	***Action***
F3E160130:		
P-E-88.57	Thorium-228	J
F3F170126:		
P-24-87.35	Thorium-230	J
F3H060192:		
P-20-89.60 P-20-99.60 P-45-81.25 P-45-91.25 P-45-DUP1	Thorium-228 Uranium-234	J
F3H210288:		
P36-EB1 P36-86.7 P36-96.7 P46-89.60 P46-99.60 P37-89.95 P37-99.95	Thorium-230	J
F3I040177:		
P-44-89.8 P-44-DUP#1 P-46-389.28	Uranium-238	J
F3I050189:		
P-47-87.08	Uranium-238	J
F3I230231:		
P-29-310.2 P-29-360.0 P-29-390.0	Thorium-230 Uranium-238	J
F3K110173:		
P-58-304.65 P-58-DUP-3 P-58-402.40 P-58-432.05	Uranium-234	J
F4A230292:		
P-56-86.55 P-56-DUP	Thorium-232	J

It should be noted that the laboratory mistakenly did not spike the original sample F3E060217-001 resulting in no tracer recovery, therefore the duplicate results (sample F3E060217-001X), which showed good tracer recovery were reported, however no laboratory duplicate results were available for QA /QC for the samples in SDG F3E060217.

It should be noted that Thorium-230 was also previously qualified “J” in samples P-24.87.35, P36-EB1, P36-86.7, P36-99.7, P46-89.60, P46-99.60, P37-89.95, P37-99.95, P-29-310.2, P-29-360.0 and P-29-390.0 due to method blank contamination or poor LCS recovery.

It should be noted that an equipment blank was used to perform the laboratory duplicate analyses, therefore all of the QC data was carefully judged and professional judgment was exercised.

3.2.6. Radionuclide Quantitation and Detection Limits

If the net positive results are less than their uncertainties and the uncertainty multiplied by 1.65 is greater than the MDC, this would indicate that the sample counts were less than the critical values or less than 95% confidence of positive detection, therefore the sample results were qualified as estimated "J", as summarized in Table 3-5. It the net negative result has an uncertainty smaller than their absolute value, this is an indication of improper blank subtraction and the sample results were rejected "R", as summarized in Table 3-6.

Table 3-5. *Evaluation of Positive Results versus Uncertainties for Alpha Spectrometry Analyses*

Sample ID	*Affected Radionuclide Results*	*Sample Concentration ± Uncertainty (pCi/L)*	*Action*
F3D290160:			
P-17-82.25	Uranium-234	0.14 ± 0.16	J
P-F-86.48	Uranium-238	0.13 ± 0.15	J
F3D290170:			J
P-D-87.05	Uranium-234	0.12 ± 0.14	J
P-D-97.05	Thorium-228	0.077 ± 0.091	J
F3F120220:			
P-C-89.60	Thorium-232	0.09 ± 0.11	J
F3G110256:			
P-35-97.2	Thorium-228	0.1 ± 0.12	J
F3G250374:			
P-42-89.6 P-42-99.6	Uranium-234	0.11 ± 0.18 0.19 ± 0.22	J
F3I040177:			
P-46-389.28	Thorium-232	0.1 ± 0.12	J
F3J070236:			
P-18-96.65	Uranium-234	0.080 ± 0.092	J
F3K080109:			
P-52-100.0	Uranium-234	0.095 ± 0.097	J
F4B110140:			
P-32-89.35 P-32-99.35	Uranium-238 Uranium-238	0.073 ± 0.085 0.068 ± 0.078	J

It should be noted that Uranium-234 was previously qualified "J" in sample P-D-87.05 due to tracer recovery and method blank contamination; Thorium-232 was previously qualified "J" in sample P-C-89.60 due to method blank contamination; and Uranium-234 was previously qualified "J" in sample P-42-89.6 and P-42-99.6 due to tracer recovery and laboratory control sample being out of criteria.

Table 3-6. *Evaluation of Net Negative Results versus Uncertainties for Alpha Spectrometry Analyses*

Sample ID	***Affected Radionuclide Results***	***Sample Concentration ± Uncertainty (pCi/L)***	***Action***
F3G110256:			
P-25-EB-1	Uranium-235	-0.031 ± 0.028	R
P-25-89.7	Thorium-232	-0.030 ± 0.028	R
F3H210288:			
P37-99.95	Thorium-228	-0.039 ± 0.033	R
F4A230292:			
P-56-86.55	Thorium-232	-0.078 ± 0.043	R

3.3. Gas Proportional Counting

3.3.1. Criteria

The QA/QC parameters presented in Section 2.1 were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Holding times and sample preservation;
- Calibration;
- Blank analysis;
- Field Duplicate Analysis;
- System performance; and
- Documentation completeness.

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.3.2. Blank Analysis

The field and laboratory blank results were evaluated using the following statistical approach: if the net blank result was not less than the associated uncertainty and if the sample result ± uncertainty was less than ten times the associated blank result ± uncertainty, the qualifier "J" was applied to the associated sample result. The statistical evaluation of the field and laboratory blank results is summarized in Table 3-7. The QAPP requires method blanks to be less than 5 times the minimum detected concentrations (MDC) and the lowest sample activity. The method blanks were not always less than the lowest sample activity. The QAPP requires the laboratory to reanalyze the affected batch. The laboratory did not do this.

Table 3-7. *Blank Evaluation for Radium-226 Analyses.*				
Blank ID	***Radionuclide***	***Blank Concentration ± Uncertainty (pCi/L)***	***Affected Samples***	***Action***
F3H210288:				
P36-EB1	Radium-226	0.37 ± 0.20	P36-86.7 P36-96.7 P46-89.60 P46-99.60 P37-89.95 P37-99.95	J
F3I090305:				
F3I120000-564B	Radium-226	0.229 ± 0.078	P-47-97.1	J

3.3.3. Laboratory Control Sample (LCS)

If the percent recovery is less than 80 or greater than 120 in the LCS then the qualifier "J" was applied to the associated sample results, as summarized in table 3-8.

Table 3-8. *Evaluation of Laboratory Control Sample*		
Sample ID	***Affected Radionuclide Results***	***Action***
F3G230216:		
P-H-86.8, P-H-96.8, P-H-EB1	Radium-226	J
F3G250374:		
P-42-89.6, P-42-99.6	Radium-226	J
F3H060192:		
P-20-89.60 P-20-99.60 P-45-81.25 P-45-91.25 P-45-DUP1	Radium-226	J
F3H210288:		
P36-EB1 P36-86.7 P36-96.7 P46-89.60 P46-99.60 P37-89.95 P37-99.95	Radium-226	J
F3H280315:		
P-46-330.21 P-46-307.69	Radium-226	J
F3I040177:		
P-44-89.8 P-44-99.3 P-44-DUP#1 P-46-389.28	Radium-226	J
F3I050189:		

Table 3-8. *Evaluation of Laboratory Control Sample*

Sample ID	***Affected Radionuclide Results***	***Action***
P-47-87.08	Radium-228	J
F3I090305:		
P-47-97.1	Radium-226	J
F3I120107:		
P-43-89.88 P-43-99.88	Radium-226	J
F3J030259:		
P-30-89.55 P-30-99.55	Radium-226	J
F3J240204:		
P-50-89.90 P-50-99.90 P-49-84.25 P-49-94.3 P-51-87.78 P-51-97.78 P-51-DUP-1	Radium-226	J
F3K080109:		
P-54-87.55 P-54-97.55 P-52-90.0 P-52-100.0 P-54-89.65 P-54-99.65	Radium-228	J
F3K110173:		
P-58-304.65 P-58-DUP-3 P-58-402.40 P-58-432.05	Radium-226	J
F3L090146:		
P-33-89.6 P-33-99.6	Radium-226	J
F4A230292:		
P-56-86.55 P-56-96.55 P-56-DUP	Radium-228	J
F4B110140:		
P-32-89.35 P-32-99.35	Radium-226	J

It should be noted that Radium-226 was previously qualified "J" in samples P36-86.7, P36-96.7, P46-89.60, P46-99.60, P37-89.95, P37-99.95 and P-47-97.1 due to equipment or method blank contamination.

3.3.4. Duplicate Analysis

If the Duplicate Error Ration (DER) is greater than one (1) when comparing laboratory or field duplicate samples then the qualifier of "J" was applied to the associated sample results, as summarized in table 3-9.

Table 3-9. *Evaluation of Duplicate Analysis*

Sample ID	***Affected Radionuclide Results***	***Action***
F3D290160:		
P-17-82.25 P-17-92.25 P-F-86.48	Radium-228	J
F3E140308:		
P-86-86.8 P-26-96.8	Radium-226	J
F3I180259:		
P-29-89.5 P-29-99.5 P-38-96.8 P-38-86.7	Radium-228	J
F3I090305:		
P-47-97.1	Radium-226	J
F3J030259:		
P-30-89.55 P-30-99.55	Radium-226	J
F3K080109:		
P-54-87.77 P-54-97.55 P-52-90.0 P-52-100.0 P-54-89.65 P-54-99.65	Radium-226	J
F4B110140:		
P-32-89.35 P-32-99.35	Radium-226	J

It should be noted that Radium-226 was previously qualified "J" in sample P-47-97.1, P-30-89.55, P-30-99.55, P-32-89.35 and P-32-99.35 due to method blank contamination and/or poor LCS recovery.

It should be noted that the LCS results in SDG F3L090146 and F4B110140 were used for laboratory duplicate analyses.

3.3.5. Radionuclide Quantitation and Detection Limits

Detection limits specified in the specific procedures must be met unless other detection limits are specified in the Statement of Work (SOW). The detection limits were not met due to insufficient sample volume. The results were reported with the detection limits that were achieved and the qualifier "DL" was applied to the associated sample results, as summarized in table 3-10.

Table 3-10. *Detection Limits for Radium-228*

Sample ID	***Affected Radionuclide Results***	***Sample Concentration ± Uncertainty (pCi/L)***	***Action***
F3F120220:			
P-C-89.60	Radium-228	0.29 ± 0.79	DL
P-C-99.60	Radium-228	-0.03 ± 0.77	DL
P-C-DUP1 #1	Radium-228	0.48 ± 0.65	DL

It should be noted that the reporting limit for sample P-33-89.6 in SDG F3L090146 was not met for Radium-228 due to insufficient sample volume available for analysis. The results are reported with the MDC achieved.

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 99 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J and UJ) due to data validation QA/QC exceedances should be considered conditionally usable and those results rejected (R) due to serious deficiencies in the ability to analyze the sample and meet quality control criteria whereas the presence or absence of the analyte cannot be verified should be considered unusable.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI, 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PSARCC) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. For the radiochemistry analyses, none of the data were rejected due to precision non-conformances.

LCS recoveries indicate the accuracy of the data. For the radiochemistry analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. For the radiochemistry analyses, none of the data were rejected due to accuracy non-conformances.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. Sensitivity requirements were met for the sample data in this project. None of the radiochemistry data were rejected due to the sensitivity non-conformances.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. Have all holding times been met?

The holding times were met for the radiochemistry analyses.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

The laboratory used the laboratory control limits during the analyses performed for this sampling event. QA/QC deviations and qualifications performed on the sample data are discussed in Chapter 3. Major non-conformances were not detected for the radiochemistry data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USDOE methods are used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for the analyses performed for this sampling event, which met data user and client needs.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The evaluation of selected raw data confirmed information provided in the data packages.

6. Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines as listed in Section 1

References

GTE Operations Support Incorporated. (GTEOSI). 2002. *Soil Remediation Program Work Plan (QAPP: Appendix H), Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1*, Revision 2, October 2002.

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ATTACHMENT A

VALIDATED DATA

REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected at the former Sylvania Electric Products Incorporated facility in Hicksville, New York. This report is concerned with metals in groundwater samples collected by Malcolm Pirnie, Inc. (MPI) from March 15, 2003 through February 19, 2004.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for analyses of metals using United States Environmental Protection Agency (USEPA) guidance methods. A total of 1,123 samples[1] were submitted, which resulted in 1,399 total metal results[2]. Of this number, 1,350 of them are results[3] of actual samples and the remainders are field quality assurance/quality control (QA/QC) indicators[4] of these samples. The analytical data generated for this investigation were evaluated by MPI using the QA/QC criteria established in the methods and USEPA guidelines. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- New York State Department of Environmental Conservation. *Analytical Services Protocol*. Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.
- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA 540-R-01-008. July 2002.
- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.

In circumstances where the quality of the data or the accuracy of the results is suspect, the project's Quality Assurance Project Plan (QAPP) and professional judgment[5] were also used to determine if results should be qualified as estimated ("J" or "UJ"). Since the individual guidance documents used (as a source of reference for the validation) differ somewhat in the type of qualification applied to data, MPI applied qualifiers generally with an err to caution (conservative). All instrument calibration analyses, laboratory control sample analyses, serial dilution analyses, and interference check sample analyses were acceptable.

There were some laboratory initial calibration blanks, continuing calibration blanks, and method blanks, which contained low concentrations of the target analytes. The presence of these analytes in specific blanks affected many project samples. Qualification of associated results was performed to show the relationship between the laboratory contamination and the uncertainty of the actual project sample results.

Matrix spike samples were not performed for all sample batches. In many instances, the matrix spikes were performed on field blank samples, which offered no information on the possible problems associated with the matrix of the actual samples. In many other instances, the matrix spikes were performed on samples, which were not associated with this project.

[1] Each sample may have been analyzed for more than one metal and may have included total recoverable and dissolved fractions.
[2] This is the number of results reported by the laboratory on their Sample Results reporting form (Form 1).
[3] This is the total number of well data points, which may include more than one metal and may include recoverable and dissolved fractions including duplicate sample results.
[4] These indicators do not include Matrix Spike/Matrix Spike Duplicate or other internal laboratory QA/QC indicators.
[5] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

The relative percent differences (RPD) between field duplicate pair results were assessed. Eight (8) of the RPDs were significant enough to qualify some of the data. Ninety-five (95) duplicate pairs were collected. This is equivalent to a field duplicate sample collection rate of 7.6 percent[6]. Based on the QAPP, the rate should have been 10 percent. With 1,255 discrete field sample data[7], 126 field duplicate data should have been collected. Therefore, evaluation of precision has not been adequate.

None of the exceedances of method non-conformances were significant enough to jeopardize the usability of the data with the exception of four hexavalent chromium samples, which exceeded their short holding time criteria. With the exception of the four results, all analytical results are usable based on the findings listed in this Data Usability Summary Report (DUSR).

Overall, 99.7 percent[8] of the metals data were determined to be usable for qualitative and quantitative purposes. Four hexavalent chromium results were qualified as unusable, "R." Sample results, which were qualified as estimated, "J" and "UJ," due to quality control (QC) exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the QAPP, has been met for the metals in groundwater database.

[6] Value = (95 duplicate data / 1,255 discrete sample data) X 100.
[7] This number represents 1,350 (non-field blank/equipment blank) total data points minus 95 duplicate sample data points.
[8] Value = ((1,399 all data points – 4 unusable data points) / 1,399 all data points) X 100.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples collected at the former Sylvania Electric Products Incorporated facility in Hicksville, New York (the Site). This report pertains to metals samples collected by Malcolm Pirnie, Inc. (MPI) from March 15, 2003 through February 19, 2004.

The sample delivery group (SDG) number (laboratory package identification number), field identification, and laboratory identification of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3C190235	MW-7	F3C190235003	Be, Cr, Cu, Ni, and Tl
	MW-2	F3C190235004	Be, Cr, Cu, Ni, and Tl
	MW-1	F3C190235005	Be, Cr, Cu, Ni, and Tl
	MW-11	F3C190235006	Be, Cr, Cu, Ni, and Tl
	MW-12	F3C190235007	Be, Cr, Cu, Ni, and Tl
	MW-5	F3C190235008	Be, Cr, Cu, Ni, and Tl
	MW-10 (also MS/MD)	F3C190235009	Be, Cr, Cu, Ni, and Tl
	MW-9	F3C190235010	Be, Cr, Cu, Ni, and Tl
	MW-6	F3C190235011	Be, Cr, Cu, Ni, and Tl
	MW-3	F3C190235012	Be, Cr, Cu, Ni, and Tl
	MW-4	F3C190235013	Be, Cr, Cu, Ni, and Tl
	MW-8	F3C190235014	Be, Cr, Cu, Ni, and Tl
	FB	F3C190235015	Be, Cr, Cu, Ni, and Tl
	MW-DUP (MW-3)	F3C190235016	Be, Cr, Cu, Ni, and Tl
F3D290160	P-17-82.25 (also MS/MSD)	F3D290160002	Ni Total
	P-17-102.27	F3D290160004	Ni N/A
	P-F-86.48	F3D290160007	Ni Dissolved
F3E020153	P-F-96.48 (also MS/MSD)	F3E020153001	Ni Dissolved
	P-F-106.46	F3E020153002	Ni Dissolved
	P-F-116.49	F3E020153003	Ni Dissolved
F3E090278	P27-79.75 (also MS/MSD)	F3E090278001	Ni Total
	P-27-89.75	F3E090278002	Ni Total
	P-27-99.75	F3E090278003	Ni Total
	P-27-109.75	F3E090278004	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3E090278 Cont'd	P-27-119.75	F3E090278005	Ni Total
	P-27-DUP (P-27-99-75)	F3E090278006	Ni Total
	P-27-129.75	F3E090278007	Ni Dissolved
	P-27-139.75	F3E090278008	Ni Total
	P-27-149.75	F3E090278009	Ni Total
	P-27-159.75	F3E090278010	Ni Total
	P-27-169.75	F3E090278011	Ni Total
	P-27-179.75	F3E090278012	Ni Total
	P-27-189.75	F3E090278013	Ni Total
	P-27-199.75	F3E090278014	Ni Dissolved
	P-27-209.75	F3E090278015	Ni Total
	P-27-219.50	F3E090278016	Ni Dissolved
	P-27-229.50	F3E090278017	Ni Total
	P-27-239.50	F3E090278018	Ni Total
	P-27-267.02	F3E090278019	Ni Total
	P-27-277.02	F3E090278020	Ni Dissolved
	P-28-77.90	F3E090278021	Ni Total
	P-28-87.02	F3E090278022	Ni Dissolved
	P-28-97.02	F3E090278023	Ni Dissolved
	P-28-107.02	F3E090278024	Ni Dissolved
	P-28-117.02	F3E090278025	Ni Total
	P-28-127.02	F3E090278026	Ni Dissolved
	P-28-137.02	F3E090278027	Ni Dissolved
	P-28-147.02	F3E090278028	Ni Dissolved
	P-28-160.02	F3E090278029	Ni Dissolved
	P-28-167.02	F3E090278030	Ni Dissolved
	P-28-177.02	F3E090278031	Ni Dissolved
	P-28-187.02	F3E090278032	Ni Dissolved
	P-28-197.02	F3E090278033	Ni Total
	P-28-207.02	F3E090278034	Ni Total
	P-28-217.02	F3E090278035	Ni Dissolved
	P-28-227.02	F3E090278036	Ni Dissolved
	P-28-237.02	F3E090278037	Ni Dissolved
	P-28-247.02 (also MS/MSD)	F3E090278038	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3E140308	P-26-76.86	F3E140308001	Ni Dissolved
	P-26-86.8	F3E140308002	Ni Dissolved
	P-26-96.8	F3E140308003	Ni Dissolved
	P-26-106.8	F3E140308004	Ni Dissolved
	P-26-116.8	F3E140308005	Ni Dissolved
	P-26-126.8	F3E140308006	Ni Dissolved
	P-26-136.8	F3E140308007	Ni Dissolved
	P-26-146.8 (also MS/MSD)	F3E140308008	Ni Dissolved
F3E160130	P-26-152.25	F3E160130001	Ni Dissolved
	P-26-162.25	F3E160130002	Ni Dissolved
	P-26-172.25	F3E160130003	Ni Dissolved
	P-26-182.25	F3E160130004	Ni Dissolved
	P-26-192.25	F3E160130005	Ni Dissolved
	P-26-202.25	F3E160130006	Ni Dissolved
	P-26-211.25	F3E160130007	Ni Dissolved
	P-26-221.25	F3E160130008	Ni Dissolved
	P-26-231.25	F3E160130009	Ni Dissolved
	P-26-241.25	F3E160130010	Ni Dissolved
	P-E-78.57	F3E160130011	Ni Total
	P-E-88.57	F3E160130012	Ni Total
F3E200165	P-26-257.2	F3E200165001	Ni Dissolved
	P-26A-276.53	F3E200165003	Ni Dissolved
	P-26A-286.5	F3E200165004	Ni Dissolved
	P-E-98.57	F3E200165007	Ni Dissolved
	P-E-108.57	F3E200165008	Ni Total
	P-E-118.57	F3E200165009	Ni Total
	P-E-128.57	F3E200165010	Ni Dissolved
	P-E-138.57	F3E200165011	Ni Dissolved
	P-E-148.57	F3E200165012	Ni Dissolved
	P-E-158.57	F3E200165013	Ni Dissolved
	P-E-168.57	F3E200165014	Ni Total
	P-E-178.57	F3E200165015	Ni Total
	P-E-198.57	F3E200165016	Ni Total
	P-E-208.57	F3E200165017	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3E200165 Cont'd	P-E-218.57	F3E200165018	Ni Dissolved
	P-E-228.57	F3E200165019	Ni Dissolved
	P-E-238.57	F3E200165020	Ni Dissolved
F3E230179	P-26A-295.85	F3E230179001	Ni Dissolved
	P-E-268.57	F3E230179002	Ni Dissolved
	P-E-292.28	F3E230179003	Ni Total
	P-E-301.23	F3E230179004	Ni Dissolved
	P-E-317.15	F3E230179005	Ni Dissolved
	P-E-332.85	F3E230179006	Ni Dissolved
	P-E-327.15	F3E230179007	Ni Dissolved
F3E290170	P-D-77.05	F3E290170001	Ni Dissolved
	P-D-87.05	F3E290170002	Ni Total
	1EB-5/27	F3E290170003	Ni Total
	P-D-97.05	F3E290170004	Ni Dissolved
	P-D-107.05 (also MS/MSD)	F3E290170005	Ni Dissolved
	P-D-127.05	F3E290170006	Ni Total
	P-D-117.05	F3E290170007	Ni Total
	P-D-137.05	F3E290170008	Ni Dissolved
	P-D-147.05	F3E290170009	Ni Dissolved
	P-15-79.65	F3E290170011	Ni Dissolved
	P-15-89.65	F3E290170012	Ni Total
	P-15-99.65	F3E290170013	Ni Total
	P-15-109.65	F3E290170014	Ni Total
	P-15-119.65	F3E290170015	Ni Total
F3F030298	P-15-129.65	F3F030298001	Ni Total
	P-15-139.65	F3F030298002	Ni Total
	P-15-149.65	F3F030298003	Ni Total
	P-15-159.65	F3F030298004	Ni Total
	P-15-169.65	F3F030298005	Ni Total
	P-15-179.65	F3F030298006	Ni Total
	P-15-189.65	F3F030298007	Ni Total
	P-15-199.65	F3F030298008	Ni Total
	P-15-208.00	F3F030298009	Ni Dissolved
	P-15-218.00	F3F030298010	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	*Sample ID*	*Laboratory ID*	*Analysis Performed*
F3F030298 Cont'd	P-15-DUP (P-15-218.00)	F3F030298011	Ni Total
	P-15-240.00	F3F030298012	Ni Dissolved
	P-15-290.05	F3F030298013	Ni Dissolved
	P-15-300.05	F3F030298014	Ni Dissolved
	P-15-310.05	F3F030298015	Ni Total
	P-15-329.10	F3F030298016	Ni Total
	P-15-339.10	F3F030298017	Ni Dissolved
	P-D-217.1	F3F030298018	Ni Dissolved
	P-D-227.1 (also MS/MSD)	F3F030298017	Ni Dissolved
	P-D-237.1	F3F030298020	Ni Dissolved
	P-D-247.05 (also MS/MSD)	F3F030298021	Ni Dissolved
	P-D-257.	F3F030298022	Ni Dissolved
	P-D-290.1	F3F030298023	Ni Dissolved
	P-D-157.05	F3F030298029	Ni Dissolved
	P-D-167.1	F3F030298030	Ni Dissolved
	P-D-177.1	F3F030298031	Ni Total
	P-D-DUP (P-D-217.1)	F3F030298032	Ni Dissolved
	P-D-187.1	F3F030298033	Ni Dissolved
	P-D-197.1	F3F030298034	Ni Dissolved
	P-D-207.1	F3F030298035	Ni Dissolved
	P-15-228.00	F3F030298036	Ni Dissolved
F3F050171	P-D-DUP#2 (P-D-321.95)	F3F050171001	Ni Dissolved
	P-D-321.95	F3F050171002	Ni Dissolved
	P-D-331.95	F3F050171003	Ni Dissolved
	P-D-341.95	F3F050171004	Ni Total
	P-D-351.95	F3F050171005	Ni Dissolved
F3F120220	P-C-79.60 (also MS/MSD)	F3F120220001	Ni Total
	P-C-89.6	F3F120220002	Ni Total
	P-C-99.6	F3F120220003	Ni Dissolved
	P-C-109.6	F3F120220004	Ni Dissolved
	P-C-119.6	F3F120220005	Ni Total
	P-C-129.6	F3F120220006	Ni Dissolved
	P-C-139.6	F3F120220007	Ni Dissolved
	P-C-149.6	F3F120220008	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3F120220 Cont'd	P-C-159.6	F3F120220009	Ni Total
	P-C-169.6	F3F120220010	Ni Dissolved
	P-C-179.6	F3F120220011	Ni Total
	P-C-DUP #1 (P-C-99.6)	F3F120220012	Ni Dissolved
F3F170126	P-C-275.3 (also MS/MSD)	F3F170126001	Ni Dissolved
	P-C-DUP-2 (P-C-320.3)	F3F170126002	Ni Dissolved
	P-C-320.3	F3F170126003	Ni Dissolved
	P-C-330.3	F3F170126004	Ni Dissolved
	P-C-337.5	F3F170126005	Ni Dissolved
	P-24-87.35	F3F170126006	Ni Dissolved
	P-24-77.35	F3F170126007	Ni Dissolved
	P-C-FB	F3F170126009	Ni
	P-C-185.3	F3F170126012	Ni Total
	P-C-195.3	F3F170126013	Ni Total
	P-C-205.3	F3F170126014	Ni Dissolved
	P-C-215.3	F3F170126015	Ni Dissolved
	P-C-225.3	F3F170126016	Ni Total
	P-C-235.3	F3F170126017	Ni Total
	P-C-245.3	F3F170126018	Ni Total
	P-C-265.3	F3F170126019	Ni Total
F3F180192	P-24-97.35 (also MS/MSD)	F3F180192002	Ni Dissolved
	P-24-107.35	F3F180192003	Ni Dissolved
	P-24-115.35	F3F180192004	Ni Dissolved
	P-24-127.3	F3F180192005	Ni Total
	P-24-137.3	F3F180192006	Ni Dissolved
	P-24-147.3	F3F180192007	Ni Total
	P-C-347.7	F3F180192008	Ni Total
F3F200145	P-24-157.3 (also MS/MSD)	F3F200145001	Ni Total
	P-24-167.3	F3F200145002	Ni Total
	P-24-177.3	F3F200145003	Ni Dissolved
	P-24-187.3	F3F200145004	Ni Total
	P-24-197.3	F3F200145005	Ni Total
	P-24-207.3	F3F200145006	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3F200145 Cont'd	P-24-217.3	F3F200145007	Ni Total
	P-24-DUP#1 (P-24-167.3)	F3F200145008	Ni Dissolved
	P-24-227.3	F3F200145009	Ni Total
	P-24-237.3	F3F200145010	Ni Total
	P-24-247.3	F3F200145011	Ni Total
	P-24-257.3	F3F200145012	Ni Total
	P-24-267.3	F3F200145015	Ni Dissolved
	P-24-277.3	F3F200145016	Ni Dissolved
	P-24-287.3	F3F200145017	Ni Dissolved
	P-24-DUP#2 (P-24-287.3)	F3F200145018	Ni Dissolved
	P-C-364.5	F3F200145019	Ni Dissolved
	P-C-374.5	F3F200145020	Ni Total
	P-C-394.5	F3F200145021	Ni Total
	P-C-384.5	F3F200145022	Ni Dissolved
F3F260187	P-24-297.3	F3F260187001	Ni Dissolved
	P-23-FB1 (also MS/MSD)	F3F260187002	Ni Total
	P-23-80.1	F3F260187003	Ni Total
	P-23-90.1	F3F260187004	Ni Dissolved
	P-23-100.1	F3F260187005	Ni Total
	P-23-110.1	F3F260187006	Ni Total
	P-23-120.1	F3F260187007	Ni Total
	P-23-130.1	F3F260187008	Ni Dissolved
	P-23-140.1	F3F260187009	Ni Dissolved
	P-23-150.1	F3F260187010	Ni Dissolved
	P-23-160.1	F3F260187011	Ni Dissolved
	P-23-170.1	F3F260187012	Ni Dissolved
	P-23-180.1	F3F260187013	Ni Dissolved
	P-23-DUP-1 (P-23-180.1)	F3F260187014	Ni Dissolved
F3F270132	P-23-190.1	F3F270132002	Ni Dissolved
	P-23-200.1	F3F270132003	Ni Dissolved
	P-23-210.1	F3F270132004	Ni Dissolved
	P-23-220.1	F3F270132005	Ni Total
	P-23-227.65	F3F270132006	Ni Dissolved
F3G010309	P-23-239.8	F3G010309001	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3G010309 Cont'd	P-23-252.0	F3G010309002	Ni Dissolved
	P-23-262.0	F3G010309003	Ni Total
	P-23A-286.96	F3G010309004	Ni Dissolved
	P-23A-293.50	F3G010309005	Ni Dissolved
F3G030162	P-23A-334.1	F3G030162002	Ni Dissolved
	P-23A-343.4	F3G030162003	Ni Dissolved
	P-23A-DUP.1 (P-23A-347.6)	F3G030162004	Ni Total
	P-23A-347.6	F3G030162005	Ni Total
	P-23A-EB-2	F3G030162006	Ni
F3G110256	P-25-EB-1	F3G110256001	Ni
	P-25-79.7	F3G110256002	Ni Total
	P-25-89.7	F3G110256003	Ni Total
	P-25-99.1	F3G110256004	Ni Total
	P-25-109.7	F3G110256005	Ni Total
	P-25-119.7 (also MS/MSD)	F3G110256006	Ni Total
	P-25-129.7	F3G110256007	Ni Total
	P-25-139.7	F3G110256008	Ni Total
	P-25-149.7	F3G110256009	Ni Total
	P-25-159.7	F3G110256010	Ni Dissolved
	P-25-169.7	F3G110256011	Ni Dissolved
	P-25-179.7	F3G110256012	Ni Total
	P-25-189.7	F3G110256013	Ni Total
	P-25-199.7	F3G110256014	Ni Dissolved
	P-25-209.7	F3G110256015	Ni Dissolved
	P-25-219.7	F3G110256016	Ni Dissolved
	P-25-DUP-1 (P-25-179.7)	F3G110256017	Ni Total
	P-35-EB-1	F3G110256018	Ni
	P-35-77.2	F3G110256019	Ni Total
	P-35-87.2	F3G110256020	Ni Total
	P-35-97.2 (also MS/MSD)	F3G110256021	Ni Total
	P-35-107.2	F3G110256022	Ni Total
	P-35-117.2	F3G110256023	Ni Total
	P-35-127.2	F3G110256024	Ni Total
	P-35-137.2	F3G110256025	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3G110256 Cont'd	P-35-147.2	F3G110256026	Ni Total
	P-35-157.2	F3G110256027	Ni Total
	P-35-167.2	F3G110256028	Ni Total
	P-35-177.2	F3G110256029	Ni Total
	P-35-DUP-1 (P-35-177.2)	F3G110256030	Ni Total
F3G150156	P-25-229.5	F3G150156001	Ni Total
	P-25-239.5	F3G150156002	Ni Dissolved
	P-25-249.5 (also MS/MSD)	F3G150156003	Ni Dissolved
	P-25-259.5	F3G150156004	Ni Dissolved
	P-25-269.5	F3G150156005	Ni Total
	P-25-275.8	F3G150156006	Ni Total
	P-25-DUP-2 (P-25-275.8)	F3G150156007	Ni Total
	P-25-290.0	F3G150156008	Ni Total
	P-25-300.0	F3G150156009	Ni Total
	P-25-310.0	F3G150156010	Ni Total
	P-25-320.0	F3G150156011	Ni Dissolved
	P-25-330.0	F3G150156012	Ni Dissolved
	P-25-340.0	F3G150156013	Ni Total
	P-25-349.4	F3G150156014	Ni Total
	P-25-370.0	F3G150156015	Ni Total
	P-25-379.2	F3G150156016	Ni Total
	P-35-187.2	F3G150156017	Ni Dissolved
	P-35-197.2	F3G150156018	Ni Dissolved
	P-35-207.2	F3G150156019	Ni Total
	P-35-217.2	F3G150156020	Ni Dissolved
	P-35-227.2	F3G150156021	Ni Dissolved
	P-35-237.2	F3G150156022	Ni Total
	P-35-247.2 (also MS/MSD)	F3G150156023	Ni Dissolved
	P-35-257.2	F3G150156024	Ni Dissolved
	P-35-267.2	F3G150156025	Ni Total
	P-35-277.2	F3G150156026	Ni Dissolved
	P-35-EB-2	F3G150156027	Ni Total
	P-35-292.2	F3G150156028	Ni Dissolved
	P-35-322.2	F3G150156029	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3G150156 Cont'd	P-35-332.2	F3G150156030	Ni Dissolved
	P-35-DUP-2 (P-35-332.2)	F3G150156031	Ni Dissolved
	P-35-342.2	F3G150156033	Ni Dissolved
	P-35-347.2	F3G150156034	Ni Dissolved
F3G230216	P-H-EB1	F3G230216001	Ni
	P-H-76.8	F3G230216002	Ni Dissolved
	P-H-86.8	F3G230216003	Ni Dissolved
	P-H-96.8	F3G230216004	Ni Total
	P-H-106.8	F3G230216005	Ni Dissolved
	P-H-116.8	F3G230216006	Ni Dissolved
	P-42-EB1	F3G230216008	Ni
F3G250374	P-H-126.8 (also MS/MSD)	F3G250374002	Ni Dissolved
	P-H-DUP1 (P-H-126.8)	F3G250374003	Ni Dissolved
	P-H-136.8	F3G250374004	Ni Dissolved
	P-H-146.8	F3G250374005	Ni Dissolved
	P-H-156.8	F3G250374006	Ni Dissolved
	P-H-166.8	F3G250374007	Ni Dissolved
	P-H-176.8	F3G250374008	Ni Dissolved
	P-H-186.8	F3G250374009	Ni Dissolved
	P-H-196.8	F3G250374010	Ni Dissolved
	P-H-EB2	F3G250374011	Ni
	P-H-206.55	F3G250374012	Ni Total
	P-42-179.6	F3G250374013	Ni Total
	P-42-189.6	F3G250374014	Ni Total
	P-42-197.7	F3G250374015	Ni Total
	P-42-202.7	F3G250374016	Ni Total
	P-42-DUP-1 (P-42-202.7)	F3G250374017	Ni Total
	P-H-DUP2 (P-H-206.55)	F3G250374019	Ni Total
	P-42-79.6	F3G250374021	Ni Total
	P-42-89.6	F3G250374022	Ni Total
	P-42-99.6	F3G250374023	Ni Total
	P-42-109.6 (also MS/MSD)	F3G250374024	Ni Total
	P-42-119.6	F3G250374025	Ni Total

__Table 1-1:__ Sample Cross-Reference List

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3G250374 Cont'd	P-42-129.6	F3G250374026	Ni Total
	P-42-139.6	F3G250374027	Ni Total
	P-42-149.6	F3G250374028	Ni Dissolved
	P-42-159.6	F3G250374029	Ni Dissolved
	P-42-169.4	F3G250374030	Ni Total
F3G290207	P-H-216.55	F3G290207001	Ni Total
	P-H-226.55	F3G290207002	Ni Total
	P-H-236.55	F3G290207003	Ni Total
	P-H-328.55	F3G290207004	Ni Total
	P-H-334.97	F3G290207005	Ni Total
	P-H-351.65	F3G290207006	Ni Dissolved
	P-H-376.85	F3G290207007	Ni Dissolved
	P-H-386.5	F3G290207008	Ni Dissolved
	P-H-396.5	F3G290207009	Ni Total
	P-42-EB-2	F3G290207010	Ni
	P-42-217.2	F3G290207011	Ni Total
	P-42-224.6	F3G290207012	Ni Total
	P-42-234.6 (also MS/MSD)	F3G290207013	Ni Dissolved
	P-42-276.4	F3G290207014	Ni Dissolved
	P-42-287.9	F3G290207015	Ni Dissolved
	P-42-298.0	F3G290207016	Ni Total
	P-42-308.6	F3G290207017	Ni Total
	P-42-319.8	F3G290207018	Ni Dissolved
	P-42-329.8	F3G290207019	Ni Total
	P-42-DUP-2 (P-42-329.8)	F3G290207020	Ni Total
	P-42-339.8	F3G290207021	Ni Total
	P-42-354.6	F3G290207022	Ni Total
F3H010243	P-42-389.50	F3H010243001	Ni Dissolved
	P-42-410.07	F3H010243002	Ni Total
	P-42-424.45	F3H010243003	Ni Total
F3H060192	P-20-79.60	F3H060192001	Ni Total
	P-20-89.60	F3H060192002	Ni Total
	P-20-99.60	F3H060192003	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3H060192 Cont'd	P-20-109.60	F3H060192004	Ni Total
	P-20-119.60	F3H060192005	Ni Total
	P-20-129.60	F3H060192006	Ni Dissolved
	P-20-139.60	F3H060192007	Ni Dissolved
	P-20-149.60	F3H060192008	Ni Total
	P-20-159.60	F3H060192009	Ni Total
	P-45-81.25	F3H060192011	Ni Total
	P-45-91.25	F3H060192012	Ni Dissolved
	P-45-101.25	F3H060192014	Ni Total
	P-45-111.25	F3H060192015	Ni Total
	P-45-121.25	F3H060192016	Ni Total
	P-45-131.25	F3H060192017	Ni Dissolved
	P-45-DUP1 (P-45-81.25)	F3H060192018	Ni Total
	P-45-71.25	F3H060192019	Ni Total
F3H080219	P-20-169.60	F3H080219001	Ni Total
	P-20-179.60 (also MS/MSD)	F3H080219002	Ni Total
	P-20-189.60	F3H080219003	Ni Dissolved
	P-20-DUP1 (P-20-169.60)	F3H080219004	Ni Total
	P-20-209.70	F3H080219005	Ni Dissolved
	P-20-220.76	F3H080219006	Ni Total
	P-20-229.70	F3H080219007	Ni Dissolved
	P-20-269.55	F3H080219009	Ni Dissolved
	P-45-151.25	F3H080219010	Ni Dissolved
	P-45-167.25	F3H080219011	Ni Dissolved
	P-45-177.25	F3H080219012	Ni Total
	P-45-187.25	F3H080219013	Ni Total
	P-45-197.25	F3H080219014	Ni Dissolved
	P-45-207.25	F3H080219015	Ni Dissolved
	P-45-217.25	F3H080219016	Ni Dissolved
	P-45-227.25	F3H080219017	Ni Total
	P-45-237.25	F3H080219018	Ni Dissolved
F3H130195	P-45-281.65	F3H130195001	Ni Dissolved
	P-45-291.65	F3H130195002	Ni Total
	P-45-301.25	F3H130195003	Ni Total

Table 1-1: Sample Cross-Reference List			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3H130196 Cont'd	P-45-311.65	F3H130195004	Ni Dissolved
	P-45-321.65	F3H130195005	Ni Total
	P-45-340.11	F3H130195006	Ni Dissolved
	P-45-351.75	F3H130195007	Ni Total
	P-20-281.94	F3H130195008	Ni Dissolved
	P-20-289.55	F3H130195009	Ni Total
	P-20-309.60 (also MS/MSD)	F3H130195010	Ni Dissolved
	P-20-319.60	F3H130195011	Ni Total
	P-20-328.19	F3H130195012	Ni Total
	P-20-339.60	F3H130195013	Ni Total
	P-20-349.60	F3H130195014	Ni Total
	P-20-359.60	F3H130195015	Ni Dissolved
	P-20-379.60	F3H130195016	Ni Dissolved
	P-20-392.0	F3H130195017	Ni Dissolved
	P-20-369.60	F3H130195018	Ni Dissolved
	P-20-FB	F3H130195019	Ni
	P-20-427.99	F3H130195021	Ni Dissolved
	P-20-DUP-2 (P-20-427.99)	F3H130195022	Ni Dissolved
F3H180106	P-45-366.39	F3H180106001	Ni Dissolved
	P-45-DUP 2 (P-45-366.39)	F3H180106002	Ni Dissolved
	P-20-462.87	F3H180106003	Ni Dissolved
	P-20-469.15	F3H180106004	Ni Dissolved
	P-20-476.68	F3H180106005	Ni Total
F3H210288	P-36-EB1	F3H210288001	Ni
	P-36-76.7	F3H210288002	Ni Dissolved
	P-36-86.7	F3H210288003	Ni Dissolved
	P-36-96.7	F3H210288004	Ni Dissolved
	P-36-106.7	F3H210288005	Ni Dissolved
	P-36-116.7	F3H210288006	Ni Dissolved
	P-36-126.7	F3H210288007	Ni Dissolved
	P-36-136.7	F3H210288008	Ni Dissolved
	P-46-79.60 (also MS/MSD)	F3H210288009	Ni Dissolved
	P-46-89.60	F3H210288010	Ni Total
	P-46-99.60	F3H210288011	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3H210288 Cont'd	P-46-109.60	F3H210288012	Ni Dissolved
	P-46-119.60	F3H210288013	Ni Total
	P-46-129.60	F3H210288014	Ni Dissolved
	P-37-79.3	F3H210288015	Ni Total
	P-37-89.95	F3H210288016	Ni Dissolved
	P-37-99.95	F3H210288017	Ni Dissolved
	P-37-109.95	F3H210288018	Ni Dissolved
	P-37-119.95	F3H210288019	Ni Dissolved
	P-37-129.95	F3H210288020	Ni Total
	P-37-139.95	F3H210288021	Ni Dissolved
	P-37-149.95	F3H210288022	Ni Total
	P-37-DUP 1 (P-37-119.95)	F3H210288023	Ni Dissolved
F3H220246	P-36-146.7	F3H220246001	Ni Dissolved
	P-36-156.7	F3H220246002	Ni Dissolved
	P-36-DUP-1 (P-36-15.7)	F3H220246003	Ni Dissolved
	P-36-166.7	F3H220246004	Ni Dissolved
	P-36-176.7	F3H220246005	Ni Dissolved
	P-36-186.7	F3H220246006	Ni Dissolved
	P-36-196.7	F3H220246007	Ni Dissolved
	P-36-206.7	F3H220246008	Ni Dissolved
	P-36-216.7	F3H220246009	Ni Dissolved
	P-36-226.7	F3H220246010	Ni Dissolved
	P-46-139.6	F3H220246011	Ni Total
	P-46-DUP-1 (P-46-139.60)	F3H220246012	Ni Total
	P-46-149.60	F3H220246013	Ni Dissolved
	P-46-159.60	F3H220246014	Ni Dissolved
	P-46-169.60 (also MS/MSD)	F3H220246015	Ni Dissolved
	P-46-179.60	F3H220246016	Ni Dissolved
	P-46-189.60	F3H220246017	Ni Total
	P-46-199.60	F3H220246018	Ni Dissolved
	P-37-159.95	F3H220246019	Ni Total
	P-37-169.95	F3H220246020	Ni Dissolved
	P-37-179.95	F3H220246021	Ni Dissolved
	P-37-189.95	F3H220246022	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3E090278 Cont'd	P-37-EB-1 (also MS/MSD)	F3H220246023	Ni
F3H220246	P-46-209.60 (also MS/MSD)	F3H270230001	Ni Dissolved
	P-46-215.15	F3H270230002	Ni Total
	P-46-275.42	F3H270230003	Ni Dissolved
	P-46-DUP-2 (P-46-275.42)	F3H270230004	Ni Dissolved
	P-46-284.32	F3H270230005	Ni Total
	P-46-291.69	F3H270230006	Ni Dissolved
	P-46-298.35	F3H270230007	Ni Total
	P-46-307.69	F3H270230008	Ni Dissolved
	P-36A-266.8	F3H270230009	Ni Total
	P-36A-282.0	F3H270230010	Ni Total
	P-36A-292.4	F3H270230011	Ni Total
	P-36-236.7	F3H270230012	Ni Dissolved
	P-36A-371.75	F3H270230013	Ni Dissolved
	P-36A-328.4	F3H270230014	Ni Dissolved
	P-36A-EB2 (also MS/MSD)	F3H270230015	Ni
	P-37-224.75	F3H270230017	Ni Dissolved
	P-37-264.85	F3H270230018	Ni Total
	P-37-274.85	F3H270230019	Ni Total
	P-37-284.4	F3H270230020	Ni Total
	P-37-304.8	F3H270230021	Ni Dissolved
	P-37-DUPL#2 (P-37-304.8)	F3H270230022	Ni Dissolved
	P-37-314.8	F3H270230023	Ni Total
F3H280315	P-37A-324.8	F3H280315001	Ni Dissolved
	P-27A-333.2	F3H280315002	Ni Total
	P-37A-356.15	F3H280315003	Ni Dissolved
	P-37A-385.0	F3H280315004	Ni Total
	P-37A-394.5	F3H280315005	Ni Total
	P-36A-475.2	F3H280315006	Ni Total
	P-46-318.42	F3H280315007	Ni Dissolved
	P-46-330.21	F3H280315008	Ni, Cr Dissolved
	P-46-340.21	F3H280315009	Ni Total
	P-46-348.32	F3H280315010	Ni Dissolved
	P-46-360.21	F3H280315011	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3H280315 Cont'd	P-46-307.69 (also MS/MSD)	F3H280315012	Cr Dissolved
F3I040177	P-44-89.8 (also MS/MSD for Ni and Cr)	F3I040177003	Ni Dissolved
	P-44-99.3	F3I040177004	Ni Dissolved
	P-44-DUP 1 (P-44-99.3)	F3I040177005	Ni Dissolved
	P-44-109.8	F3I040177006	Ni Dissolved
	P-46-389.28 (also MS for Cr+6)	F3I040177007	Ni, Cr, Cr+6 Total
	P-44-121.55	F3I040177008	Ni Dissolved
	P-44-79.3	F3I040177010	Ni Dissolved
F3I050189	P-44-131.1	F3I050189001	Ni Dissolved
	P-44-139.8	F3I050189002	Ni Dissolved
	P-44-149.8	F3I050189003	Ni Dissolved
	P-44-159.8	F3I050189004	Ni Dissolved
	P-44-169.8	F3I050189005	Ni Dissolved
	P-44-179.8	F3I050189006	Ni Dissolved
	P-44-189.8	F3I050189007	Ni Dissolved
	P-44-199.8	F3I050189008	Ni Dissolved
	P-47-77.1	F3I050189009	Ni Total
	P-47-87.08	F3I050189010	Ni Total
	P-46-399.30	F3I050189011	Ni Dissolved
	P-46-409.34	F3I050189012	Ni Total
	P-46-DUP-3 (P-46-409.34)	F3I050189013	Ni Total
	P-46-419.27	F3I050189014	Ni Dissolved
	P-46-429.95	F3I050189015	Ni Dissolved
F3I090305	P-46-438.47	F3I090305001	Ni Dissolved
	P-46-470.25	F3I090305002	Ni Dissolved
	P-46-480.25	F3I090305003	Ni Dissolved
	P-46-490.25	F3I090305004	Ni Dissolved
	P-46-498.12 (also MS/MSD)	F3I090305005	Ni Dissolved
	P-44-DUP-2 (P-44-239.85)	F3I090305006	Ni Dissolved
	P-44-215.5	F3I090305007	Ni Total
	P-44-229.2	F3I090305008	Ni Total
	P-44-239.85	F3I090305009	Ni Dissolved
	P-44-249.85	F3I090305010	Ni Total
	P-44-257.1	F3I090305011	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
Dissolved F3I090305 Cont'd	P-44-284.85	F3I090305012	Ni Total
	P-44-299.85	F3I090305013	Ni Total
	P-44-307.9	F3I090305014	Ni Dissolved
	P-44-EB-3	F3I090305015	Ni
	P-44-DUP-3 (P-44-339.8)	F3I090305016	Ni Dissolved
	P-44-339.8	F3I090305017	Ni Dissolved
	P-44-349.8	F3I090305018	Ni Dissolved
	P-44-356.1	F3I090305019	Ni Dissolved
	P-47-97.1	F3I090305020	Ni Total
	P-47-107.1	F3I090305021	Ni Total
	P-47-117.1	F3I090305022	Ni Total
	P-47-127.1	F3I090305023	Ni Total
	P-47-137.1	F3I090305024	Ni Dissolved
	P-47-147.1	F3I090305026	Ni Dissolved
	P-47-157.1	F3I090305027	Ni Dissolved
	P-47-DUP-2 (P-47-163.9)	F3I090305028	Ni Dissolved
	P-47-163.9	F3I090305029	Ni Dissolved
	P-47-177.0	F3I090305030	Ni Dissolved
	P-47-DUP-3 (P-47-187.0)	F3I090305031	Ni Dissolved
	P-47-187.0	F3I090305032	Ni Dissolved
	P-47-197.0	F3I090305033	Ni Dissolved
	P-47-205.7	F3I090305034	Ni Dissolved
	P-47-217.0	F3I090305035	Ni Dissolved
	P-47-227.0	F3I090305036	Ni Total
	P-47-247.0	F3I090305037	Ni Total
	P-47-272.0 (also MS/MSD)	F3I090305038	Ni Total
F3I120107	P-43-79.88	F3I120107002	Ni Total
	P-43-89.88	F3I120107003	Ni Total
	P-43-99.88	F3I120107004	Ni Dissolved
	P-43-109.88	F3I120107005	Ni Total
	P-43-119.88	F3I120107006	Ni Dissolved
	P-43-DUP-1 (P-43-119.88)	F3I120107007	Ni Dissolved
	P-43-129.88	F3I120107008	Ni Dissolved
	P-47-282.0 (also MS/MSD)	F3I120107009	Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3I120107 Cont'd	P-47-308.5	F3I120107010	Ni Total
	P-47-DUP-4 (P-47-317.0)	F3I120107011	Ni Total
	P-47-317.0	F3I120107012	Ni Total
	P-47-327.7	F3I120107013	Ni Dissolved
	P-47-337.0	F3I120107014	Ni Dissolved
	P-47-344.1	F3I120107015	Ni Dissolved
F3I150101	P-47-368.4	F3I150101001	Ni Dissolved
	P-47-377.0	F3I150101002	Ni Dissolved
	P-47-387.0	F3I150101003	Ni Dissolved
	P-47-397.00	F3I150101007	Ni Total
F3I180259	P-29-79.5	F3I180259001	Ni Total
	P-29-89.5	F3I180259002	Ni Dissolved
	P-29-99.5	F3I180259003	Ni Dissolved
	P-29-109.5	F3I180259005	Ni Dissolved
	P-29-DUP-1 (P-29-109.5)	F3I180259006	Ni Dissolved
	P-29-119.5 (also MS/MSD)	F3I180259007	Ni Total
	P-29-129.5	F3I180259008	Ni Total
	P-29-139.5	F3I180259009	Ni Total
	P-29-149.5	F3I180259010	Ni Total
	P-29-159.5	F3I180259011	Ni Total
	P-43-139.88	F3I180259013	Ni Dissolved
	P-43-153.05	F3I180259014	Ni Dissolved
	P-43-161.65	F3I180259015	Ni Dissolved
	P-43-169.88	F3I180259016	Ni Dissolved
	P-43-179.88	F3I180259017	Ni Dissolved
	P-43-189.88	F3I180259018	Ni Dissolved
	P-43-199.88	F3I180259019	Ni Total
	P-38-76.7	F3I180259021	Ni Total
	P-38-86.7	F3I180259022	Ni Dissolved
	P-38-96.8	F3I180259025	Ni Dissolved
	P-38-106.7	F3I180259026	Ni Total
	P-38-116.7	F3I180259027	Ni Dissolved
	P-38-DUP-1 (P-38-116.7)	F3I180259028	Ni Dissolved
	P-38-126.7	F3I180259029	Ni Dissolved

Table 1-1: Sample Cross-Reference List			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3I180259 Cont'd	P-38-136.7	F3I180259030	Ni Dissolved
	P-38-146.7 (also MS/MSD)	F3I180259031	Ni Dissolved
	P-38-152.5	F3I180259032	Ni Total
F3I230231	P-29-169.35	F3I230231001	Ni Total
	P-29-176.7	F3I230231002	Ni Dissolved
	P-29-EB-1	F3I230231003	Ni
	P-29-191.33	F3I230231004	Ni Dissolved
	P-29-200.8	F3I230231005	Ni Total
	P-29-231.0	F3I230231006	Ni Total
	P-29-239.45	F3I230231007	Ni Dissolved
	P-29-249.85	F3I230231008	Ni Total
	P-29-259.5	F3I230231009	Ni Total
	P-29-268.4	F3I230231010	Ni Total
	P-29-278.4	F3I230231011	Ni Total
	P-29-289.85	F3I230231012	Ni Total
	P-29-299.85	F3I230231013	Ni Total
	P-29-310.2 (also MS/MSD)	F3I230231014	Ni, Cr, Cr+6 Total
	P-29-318.9	F3I230231015	Ni Total
	P-29-329.85	F3I230231016	Ni Total
	P-29-DUP-2 (P-29-329.85)	F3I230231017	Ni Total
	P-29-339.5	F3I230231018	Ni
	P-29-EB-2	F3I230231019	Ni
	P-29-360.0	F3I230231020	Ni, Cr, Cr+6 Total
	P-29-369.2 (also MS/MSD)	F3I230231021	Ni Total
	P-38-166.3	F3I230231022	Ni Total
	P-38-176.3	F3I230231023	Ni Total
	P-38-186.3	F3I230231024	Ni Total
	P-38-207.5	F3I230231025	Ni Total
	P-38-216.3	F3I230231026	Ni Dissolved
	P-38-226.3	F3I230231027	Ni Dissolved
	P-38-260.7	F3I230231028	Ni Dissolved
	P-38-312.9	F3I230231029	Ni Total
	P-38-322.9	F3I230231030	Ni Dissolved
	P-38-DUP-2 (P-38-322.9)	F3I230231031	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3I230231 Cont'd	P-38-332.3	F3I230231032	Ni NA
	P-38-341.1	F3I230231033	Ni Dissolved
	P-43-233.85	F3I230231034	Ni Total
	P-43-246.68	F3I230231035	Ni Dissolved
	P-43-DUP-2 (P-43-246.68)	F3I230231036	Ni Dissolved
	P-43-254.85	F3I230231037	Ni Dissolved
	P-43-264.85	F3I230231038	Ni Dissolved
	P-43-274.85	F3I230231039	Ni Dissolved
	P-43-284.85	F3I230231040	Ni Dissolved
	P-43-294.85	F3I230231041	Ni Total
	P-43-304.85	F3I230231042	Ni Dissolved
	P-29-390.0 (also MS/MSD)	F3I230231044	Ni, Cr, Cr+6 Total
F3I250196	P-38-370.1	F3I250196001	Ni Dissolved
	P-38-381.3	F3I250196002	Ni NA
	P-38-391.3	F3I250196003	Ni NA
	P-38-FB-2	F3I250196004	Ni
	P-38-DUP-3 (P-38-381.3)	F3I250196005	Ni NA
	P-29-410.7	F3I250196006	Ni Total
F3J030259	P-30-79.55	F3J030259001	Ni Dissolved
	P-30-89.50 (also MS/MSD)	F3J030259002	Ni Dissolved
	P-30-99.50	F3J030259003	Ni Dissolved
	P-30-119.50	F3J030259004	Ni Dissolved
	P-30-128.80	F3J030259005	Ni Dissolved
	P-30-139.50	F3J030259006	Ni Dissolved
	P-30-149.50	F3J030259007	Ni Dissolved
	P-30-186.25	F3J030259008	Ni Dissolved
	P-30-194.35	F3J030259009, 010	Ni Dissolved, Ni Total
	P-30-204.55	F3J030259011, 012	Ni Dissolved, Ni Total
	P-30-DUP-1 (P-30-204.55)	F3J030259013, 014	Ni Dissolved, Ni Total
F3J070236	P-30-214.55		Ni Dissolved, Ni Total
	P-30-224.55		Ni Dissolved
	P-30-232.85 (also MS/MSD)		Ni Dissolved
	P-30-244.5		Ni Dissolved
	P-30A-260.85		Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3J070236 Cont'd	P-30A-269.00		Ni Dissolved
	P-30A-279.00		Ni Dissolved, Ni Total
	P-30A-289.0		Ni Dissolved, Ni Total
	P-30A-298.6		Ni Dissolved, Ni Total
	P-30A-DUP-2 (P30A-298.6)		Ni Dissolved, Ni Total
	P-30A-307.45		Ni Dissolved, Ni Total
	P-30-EB-2		Ni Total
	P-18-EB-1		Ni Dissolved
	P-18-76.65		Ni Dissolved, Ni Total
	P-18-86.65		Ni Dissolved, Ni Total
	P-18-96.65		Ni Dissolved, Ni Total
	P-18-106.65 (Total – also MS/MSD)		Ni Dissolved, Ni Total
	P-18-116.65		Ni Dissolved
	P-18-126.65		Ni Dissolved, Ni Total
	P-18-136.65		Ni Dissolved, Ni Total
	P-18-146.65		Ni Dissolved
	P-18-156.65 (Dissolved – also MS/MSD)		Ni Dissolved, Ni Total
	P-18-DUP-1 (P-18-156.65)		Ni Dissolved, Ni Total
	P-18-166.65		Ni Dissolved
	P-18-176.65		Ni Dissolved
	P-18-186.65		Ni Dissolved, Ni Total
F3J110172	P-30A-331.0 (Dissolved – also MS/MSD)	F3J110172001, 018	Ni Dissolved, Ni Total
	P-30A-340.0	F3J110172035	Ni Dissolved
	P-30A-345.25 (Total – also MS/MSD)	F3J110172002, 019	Ni Dissolved, Ni Total
	P-30A-390.8	F3J110172036	Ni Dissolved
	P-30A-399.2	F3J110172037	Ni Dissolved
	P-30A-406.55	F3J110172003, 020	Ni Dissolved, Ni Total
	P-30A-DUP-3 (P-30A-406.55)	F3J110172004, 021	Ni Dissolved, Ni Total
	P-18-207.65	F3J110172005	Ni Dissolved
	P-18-217.65	F3J110172006	Ni Dissolved, Ni Total
	P-18-227.65	F3J110172007	Ni Dissolved
	P-18-237.65	F3J110172008	Ni Dissolved
	P-18-247.65	F3J110172009, 026	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3J110172 Cont'd	P-18-DUP-2 (P-18-247.65)	F3J110172010, 027	Ni Dissolved, Ni Total
	P-18-257.65	F3J110172011	Ni Dissolved
	P-18-267.65	F3J110172012	Ni Dissolved
	P-18-277.65	F3J110172013	Ni Dissolved
	P-18-287.65	F3J110172014, 031	Ni Dissolved, Ni Total
	P-18-302.66	F3J110172015, 032	Ni Dissolved, Ni Total
	P-18-328.31	F3J110172016	Ni Dissolved
	P-18-335.80	F3J110172017, 034	Ni Dissolved, Ni Total
F3J240204	P18-343.96	F3J240204001	Ni Dissolved
	P-18-350.25	F3J240204002	Ni Dissolved
	P-50-82.90	F3J240204003	Ni Dissolved
	P-50-89.90	F3J240204004	Ni Dissolved
	P-50-99.90	F3J240204005	Ni Dissolved
	P-50-109.90	F3J240204006	Ni Dissolved
	P-50-119.90	F3J240204007	Ni Dissolved
	P-50-129.90	F3J240204008	Ni Dissolved
	P-50-DUP-1 (P-50-129.90)	F3J240204009	Ni Dissolved
	P-50-139.90	F3J240204010	Ni Dissolved
	P-50-149.90	F3J240204011	Ni Dissolved
	P-50-159.90	F3J240204012	Ni Dissolved
	P-50-169.90	F3J240204013	Ni Dissolved
	P-50-179.90	F3J240204014	Ni Dissolved
	P-50-189.90 (also MS/MSD)	F3J240204015	Ni Dissolved
	P-49-74.25	F3J240204016	Ni Dissolved, Ni Total
	P-49-84.25	F3J240204017	Ni Dissolved
	P-49-94.3	F3J240204018	Ni Dissolved
	P-49-104.6	F3J240204019	Ni Dissolved
	P-49-114.3	F3J240204020	Ni Dissolved
	P-49-124.3	F3J240204021	Ni Dissolved
	P-49-134.3	F3J240204022	Ni Dissolved, Ni Total
	P-49-144.3	F3J240204023	Ni Dissolved
	P-49-167.3	F3J240204024	Ni Dissolved
	P-49-DUP-1 (P-49-167.3)	F3J240204025	Ni Dissolved
	P-49-177.3	F3J240204026	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3J240204 Cont'd	P-50-198.55	F3J240204028	Ni Dissolved
	P-51-77.78	F3J240204029	Ni Dissolved
	P-51-87.78	F3J240204030	Ni Dissolved
	P-51-97.78	F3J240204031	Ni Dissolved
	P-51-DUP-1 (P-51-97.78)	F3J240204032	Ni Dissolved
	P-51-107.78	F3J240204033	Ni Dissolved, Ni Total
	P-51-117.78	F3J240204034	Ni Dissolved
	P-51-127.78	F3J240204035	Ni Dissolved
	P-51-137.78	F3J240204036	Ni Dissolved
	P-51-147.78	F3J240204037	Ni Dissolved, Ni Total
	P-51-158.02	F3J240204038	Ni Dissolved
	P-51-167.78	F3J240204039	Ni Dissolved
	P-49-EB-1	F3J240204040	Ni Dissolved
	P-51-177.78	F3J240204041	Ni Dissolved
	P-51-EB-1	F3J240204042	Ni Dissolved, Ni Total
	P-50-EB-1 (also MS/MSD)	F3J240204043	Ni Total
F3J290103	P-50-206.64	F3J290103001	Ni Dissolved
	P-50-242.55	F3J290103002	Ni Dissolved
	P-50-249.90	F3J290103003	Ni Dissolved
	P-50-259.90	F3J290103004	Ni Dissolved
	P-50-267.44	F3J290103005	Ni Dissolved, Ni Total
	P-50-279.90	F3J290103006	Ni Dissolved
	P-50-289.90	F3J290103007	Ni Dissolved, Ni Total
	P-50-299.90	F3J290103008	Ni Dissolved, Ni Total
	P-50-309.90	F3J290103009	Ni Dissolved, Ni Total
	P-50-319.90	F3J290103010	Ni Dissolved, Ni Total
	P-50-327.07	F3J290103011	Ni Dissolved, Ni Total
	P-50-EB-2	F3J290103012	Ni Dissolved, Ni Total
	P-50-342.60	F3J290103013	Ni Dissolved, Ni Total
	P-50-DUP-2 (P-50-342.60)	F3J290103014	Ni Dissolved, Ni Total
	P-50-349.90 (also MS/MSD)	F3J290103015	Ni Dissolved, Ni Total
	P-50-359.90	F3J290103016	Ni Dissolved, Ni Total
	P-50-370.45	F3J290103017	Ni Dissolved, Ni Total
	P-50-376.74	F3J290103018	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3J290103 Cont'd	P-50-385.90	F3J290103020	Ni Dissolved, Ni Total
	P-49-222.3	F3J290103021	Ni Dissolved
	P-49-232.3	F3J290103022	Ni Dissolved
	P-49-239.3	F3J290103023	Ni Dissolved
	P-49-249.3 (also MS/MSD)	F3J290103024	Ni Dissolved
	P-49-261	F3J290103025	Ni Dissolved
	P-49-284.3	F3J290103027	Ni Dissolved
	P-49-314.0 (also MS/MSD)	F3J290103028	Ni Dissolved
	P-49-333.0	F3J290103029	Ni Dissolved
	P-49-324.0	F3J290103030	Ni Dissolved
	P-49-340.8	F3J290103031	Ni Dissolved
	P-49-DUP-2 (P-49-340.8)	F3J290103032	Ni Dissolved
	P-51-201.20	F3J290103034	Ni Dissolved, Ni Total
	P-51-226.75	F3J290103035	Ni Dissolved
	P-51-236.75	F3J290103036	Ni Dissolved
	P-51-DUP-2 (P-51-246.75)	F3J290103037	Ni Dissolved
	P-51-246.75	F3J290103038	Ni Dissolved
	P-51-256.75	F3J290103039	Ni Dissolved
	P-51-266.71	F3J290103040	Ni Dissolved
	P-51-276.75	F3J290103041	Ni Dissolved
	P-51-286.75	F3J290103042	Ni Dissolved
	P-51-295.25	F3J290103043	Ni Dissolved, Ni Total
	P-51-301.12	F3J290103044	Ni Dissolved
F3J310287	P-50-413.43	F3J310287001	Ni Total
	P-50-424.08	F3J310287002	Ni Dissolved
	P-50-434.90	F3J310287003	Ni Dissolved, Ni Total
	P-49-394.1 (also MS/MSD)	F3J310287004	Ni Dissolved
	P-49-423.0	F3J310287005	Ni Dissolved, Ni Total
	P-49-444.1	F3J310287006	Ni Dissolved
	P-49-463.2	F3J310287007	Ni Dissolved
	P-51-321.00	F3J310287008	Ni Dissolved, Ni Total
	P-51-327.85	F3J310287010	Ni Dissolved, Ni Total
	P-51-336.85 (Total also MS/MSD)	F3J310287011	Ni Dissolved, Ni Total
	P-51-346.85	F3J310287012	Ni Dissolved, Ni Total

Table 1-1: Sample Cross-Reference List

Package Identification	Sample ID	Laboratory ID	Analysis Performed
F3J310287 Cont'd	P-51-363.30	F3J310287013	Ni Dissolved, Ni Total
	P-51-371.80	F3J310287014	Ni Dissolved, Ni Total
	P-51-381.80	F3J310287015	Ni Dissolved
F3K080109	P-54-74.15	F3K080109001	Ni Dissolved
	P-54-87.55	F3K080109002	Ni Dissolved
	P-54-97.55	F3K080109003	Ni Dissolved
	P-54-107.55 (also MS/MSD)	F3K080109004	Ni Dissolved
	P-54-117.55	F3K080109005	Ni Dissolved, Ni Total
	P-54-127.55	F3K080109006	Ni Dissolved, Ni Total
	P-54-137.55 (Total also MS/MSD)	F3K080109007	Ni Dissolved, Ni Total
	P-54-DUP-1 (P-54-137.55)	F3K080109008	Ni Dissolved, Ni Total
	P-54-147.55	F3K080109009	Ni Dissolved, Ni Total
	P-54-155.75	F3K080109010	Ni Dissolved, Ni Total
	P-54-165.85	F3K080109011	Ni Dissolved, Ni Total
	P-54-177.55	F3K080109012	Ni Dissolved
	P-54-187.55	F3K080109013	Ni Dissolved
	P-52-EB-1	F3K080109014	Ni Dissolved
	P-52-80.0	F3K080109015	Ni Dissolved, Ni Total
	P-52-90.0	F3K080109016	Ni Dissolved, Ni Total
	P-52-100.0	F3K080109017	Ni Dissolved, Ni Total
	P-52-110.0	F3K080109018	Ni Dissolved
	P-52-120.0	F3K080109019	Ni Dissolved
	P-52-130.0	F3K080109020	Ni Dissolved, Ni Total
	P-52-140.0	F3K080109021	Ni Dissolved, Ni Total
	P-52-150.0	F3K080109022	Ni Dissolved, Ni Total
	P-52-160.0 (Dissolved also MS/MSD)	F3K080109023	Ni Dissolved, Ni Total
	P-52-170.0	F3K080109024	Ni Dissolved, Ni Total
	P-52-DUP-1 (P-52-170.0)	F3K080109025	Ni Dissolved, Ni Total
	P-52-180.0	F3K080109026	Ni Dissolved
	P-58-EB-1	F3K080109027	Ni Total
	P-58-79.65	F3K080109028	Ni Dissolved, Ni Total
	P-58-89.65	F3K080109029	Ni Dissolved
	P-58-99.65	F3K080109030	Ni Dissolved
	P-58-109.65	F3K080109031	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3K080109 Cont'd	P-58-119.65	F3K080109032	Ni Dissolved
	P-58-129.65	F3K080109033	Ni Dissolved
	P-58-139.65 (also MS/MSD)	F3K080109034	Ni Dissolved
	P-58-149.65	F3K080109035	Ni Dissolved
	P-58-159.65	F3K080109036	Ni Dissolved
	P-58-DUP-1 (P-58-159.65)	F3K080109037	Ni Dissolved
	P-58-169.65	F3K080109038	Ni Dissolved, Ni Total
	P-58-179.65	F3K080109039	Ni Dissolved, Ni Total
	P-58-189.65	F3K080109040	Ni Dissolved, Ni Total
	P-58-196.02	F3K080109041	Ni Dissolved
	P-58-213.20	F3K080109042	Ni Dissolved
	P-54-EB-1	F3K080109043	Ni Dissolved, Ni Total
F3K110173	P-58-274.65	F3K110173001	Ni Dissolved, Ni Total
	P-58-DUP-2 (P-58-274.65)	F3K110173002	Ni Dissolved, Ni Total
	P-58-284.65	F3K110173003	Ni Dissolved
	P-58-294.65	F3K110173004	Ni Dissolved
	P-58-304.65	F3K110173005	Ni Dissolved, Cr, Cr+6
	P-58-314.65	F3K110173007	Ni Dissolved, Ni Total
	P-58-323.15	F3K110173008	Ni Dissolved, Ni Total
	P-58-342.25	F3K110173009	Ni Dissolved, Ni Total
	P-58-402.40	F3K110173010	Ni Dissolved, Cr, Cr+6
	P-58-432.05 (Ni Dissolved, Ni Total, Cr, and Cr+6 also MS/MSD)	F3K110173011	Ni Dissolved, Ni Total, Cr, Cr+6
	P-52-224.5	F3K110173012	Ni Dissolved, Ni Total
	P-54-226.55	F3K110173013	Ni Dissolved
	P-54-236.55	F3K110173014	Ni Dissolved
	P-54-246.55	F3K110173015	Ni Dissolved
	P-54-256.55	F3K110173016	Ni Dissolved, Ni Total
	P-54-267.95	F3K110173017	Ni Dissolved
	P-54-DUP-2 (P-54-267.95)	F3K110173018	Ni Dissolved
	P-54-276.4	F3K110173019	Ni Dissolved, Ni Total
	P-54-285.4	F3K110173020	Ni Dissolved, Ni Total
	P-54-296.25	F3K110173021	Ni Dissolved, Ni Total
	P-54-303.55	F3K110173022	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3K110173 Cont'd	P-52-232.3	F3K110173023	Ni Dissolved, Ni Total
	P-52-243.7	F3K110173024	Ni Dissolved
	P-52-254.5	F3K110173025	Ni Dissolved
	P-52-264.5	F3K110173026	Ni Dissolved
	P-52-274.5	F3K110173027	Ni Dissolved
	P-52-283.5	F3K110173028	Ni Dissolved, Ni Total
	P-52-291.7 (also MS/MSD)	F3K110173029	Ni Dissolved
	P-52-299.5	F3K110173030	Ni Dissolved
F3K140242	P-58-471.35	F3K140242001	Ni Dissolved, Ni Total
	P-54-326.25	F3K140242002	Ni Dissolved, Ni Total
	P-54-334.4	F3K140242003	Ni Dissolved, Ni Total
	P-54-342.95 (Total also MS/MSD)	F3K140242004	Ni Dissolved, Ni Total
	P-54-351.25	F3K140242005	Ni Dissolved
	P-54-DUP-3 (P-54-351.25)	F3K140242006	Ni Dissolved
	P-54-360.8	F3K140242007	Ni Dissolved
	P-54-400.5	F3K140242008	Ni Dissolved, Ni Total
	P-52-319.2	F3K140242010	Ni Dissolved, Ni Total
	P-52-327.2	F3K140242011	Ni Dissolved, Ni Total
	P-52-339.2 (also MS/MSD)	F3K140242012	Ni Dissolved
	P-52-364.2	F3K140242013	Ni Dissolved, Ni Total
	P-52-DUP-2 (P-52-364.2)	F3K140242014	Ni Dissolved, Ni Total
	P-52-374.4	F3K140242015	Ni Dissolved, Ni Total
	P-52-395.4	F3K140242016	Ni Dissolved
	P-54-411.05	F3K140242017	Ni Dissolved, Ni Total
F3K210372	P-52-404.45	F3K210372001	Ni Dissolved
	P-52-414.15	F3K210372002	Ni Dissolved, Ni Total
	P-52-444.35	F3K210372003	Ni Dissolved
	P-52-483.38	F3K210372004	Ni Dissolved
	P-52-EB-2	F3K210372005	Ni Total
	EB-P-54-11-17	F3K210372007	Ni Dissolved, Ni Total
	P-54-421.00	F3K210372008	Ni Dissolved
	P-54-431.00	F3K210372009	Ni Dissolved
	P-54-437.05	F3K210372010	Ni Dissolved
	P-53-86.40	F3K210372011	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3K210372 Cont'd	P-53-EB-11-20	F3K210372012	Ni Dissolved, Ni Total
	P-53-76.40	F3K210372013	Ni Dissolved, Ni Total
F3K280120	P-53-96.40	F3K280120001	Ni Dissolved, Ni Total
	P-53-106.40	F3K280120002	Ni Dissolved, Ni Total
	P-53-116.40	F3K280120003	Ni Dissolved, Ni Total
	P-53-126.40	F3K280120004	Ni Dissolved
	P-53-136.40	F3K280120005	Ni Dissolved
	P-53-146.40	F3K280120006	Ni Dissolved, Ni Total
	P-53-DUP-1 (P-53-146.40)	F3K280120007	Ni Dissolved, Ni Total
	P-53-156.40 (also MS/MSD)	F3K280120008	Ni Dissolved
	P-53-165.70	F3K280120009	Ni Dissolved, Ni Total
	P-53-176.40	F3K280120010	Ni Dissolved
	P-53-188.85	F3K280120011	Ni Dissolved, Ni Total
	P-53-212.60	F3K280120012	Ni Dissolved, Ni Total
	P-53-221.35	F3K280120013	Ni Dissolved
	P-53-231.35	F3K280120014	Ni Dissolved
	P-53-238.55	F3K280120015	Ni Dissolved
	P-53-248.35	F3K280120016	Ni Dissolved
	P-53-256.35	F3K280120017	Ni Dissolved
	P-53-266.35	F3K280120018	Ni Dissolved
	P-53-DUP-2 (P-53-266.35)	F3K280120019	Ni Dissolved
	P-53-276.35	F3K280120020	Ni Dissolved
	P-53-286.35	F3K280120021	Ni Dissolved
	P-53-295.50	F3K280120022	Ni Dissolved
	P-53-306.00	F3K280120023	Ni Dissolved
	P-53-313.30 (also MS/MSD)	F3K280120024	Ni Dissolved
	P-34-EB-1	F3K280120025	Ni Total
	P-34-79.55 (Total also MS/MSD)	F3K280120026	Ni Dissolved, Ni Total
	P-34-89.55	F3K280120027	Ni Dissolved, Ni Total
	P-34-99.55	F3K280120028	Ni Dissolved, Ni Total
	P-34-109.55	F3K280120029	Ni Dissolved
	P-34-119.55	F3K280120030	Ni Dissolved
	P-34-129.55	F3K280120031	Ni Dissolved, Ni Total
	P-34-139.55	F3K280120032	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3K280120 Cont'd	P-34-DUP-1 (P-34-139.55)	F3K280120033	Ni Dissolved, Ni Total
	P-34-164.55	F3K280120034	Ni Dissolved, Ni Total
	P-34-154.55	F3K280120035	Ni Dissolved, Ni Total
	P-34-174.55	F3K280120036	Ni Dissolved
	P-34-184.55 (Dissolved also MS/MSD)	F3K280120037	Ni Dissolved, Ni Total
	P-34-194.55	F3K280120038	Ni Dissolved, Ni Total
	P-34-204.55	F3K280120039	Ni Dissolved, Ni Total
	P-34-214.55	F3K280120040	Ni Dissolved, Ni Total
	P-34-224.55	F3K280120041	Ni Dissolved, Ni Total
	P-34-234.55	F3K280120042	Ni Dissolved, Ni Total
	P-34-244.55	F3K280120043	Ni Dissolved, Ni Total
	P-34-DUP-2 (P-34-244.55) (Total also MS/MSD)	F3K280120044	Ni Dissolved, Ni Total
	P-34-254.55	F3K280120045	Ni Dissolved, Ni Total
	P-34-264.55	F3K280120046	Ni Dissolved, Ni Total
	P-34-284.55	F3K280120047	Ni Dissolved
	P-34-294.55	F3K280120048	Ni Dissolved
	P-34-304.50	F3K280120049	Ni Dissolved, Ni Total
	P-53-331.10	F3K280120051	Ni Dissolved
	P-53-340.05	F3K280120052	Ni Dissolved, Ni Total
F3L050365	P-34-324.50	F3L050365001	Ni Dissolved, Ni Total
	P-34-334.50 (Total also MS/MSD)	F3L050365002	Ni Dissolved, Ni Total
	P-34-352.73	F3L050365003	Ni Dissolved, Ni Total
	P-34-384.35	F3L050365004	Ni Dissolved, Ni Total
	P-34-394.55 (also MS/MSD)	F3L050365005	Ni Dissolved
	P-34-401.58	F3L050365006	Ni Dissolved
	P-53-366.65	F3L050365008	Ni Dissolved
	P-53-391.6	F3L050365009	Ni Dissolved, Ni Total
	P-53-401.10	F3L050365010	Ni Dissolved
	P-53-410.15	F3L050365011	Ni Dissolved, Ni Total
F3L090146	P-33-EB-1	F3L090146001	Ni Total
	P-33-79.6	F3L090146002	Ni Dissolved
	P-33-89.6	F3L090146003	Ni Dissolved
	P-33-99.6	F3L090146004	Ni Dissolved
	P-33-109.6	F3L090146005	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F3L090146 Cont'd	P-33-119.6	F3L090146006	Ni Dissolved
	P-33-129.6	F3L090146007	Ni Dissolved
	P-33-139.6	F3L090146008	Ni Dissolved
	P-33-149.6 (Total also MS/MSD)	F3L090146009	Ni Dissolved, Ni Total
	P-33-159.6	F3L090146010	Ni Dissolved, Ni Total
	P-33-169.6	F3L090146011	Ni Dissolved
	P-33-179.6	F3L090146012	Ni Dissolved, Ni Total
	P-33-DUP-1 (P-33-169.6)	F3L090146013	Ni Dissolved
	P-33-189.6	F3L090146014	Ni Dissolved, Ni Total
	P-33-198.1	F3L090146015	Ni Dissolved, Ni Total
	P-33-214.6	F3L090146016	Ni Dissolved
	P-33-224.6	F3L090146017	Ni Dissolved
	P-53-426.75	F3L090146018	Ni Total
	P-53-480.90 (Dissolved also MS/MSD)	F3L090146019	Ni Dissolved
F3L120339	P-53-487.40	F3L120339001	Ni Dissolved, Ni Total
	P-53-497.00	F3L120339002	Ni Dissolved
	P-53-504.80	F3L120339003	Ni Dissolved, Ni Total
	P-33-234.6	F3L120339004	Ni Dissolved
	P-33-244.6	F3L120339005	Ni Dissolved, Ni Total
	P-33-254.6	F3L120339006	Ni Dissolved, Ni Total
	P-33-264.6	F3L120339007	Ni Dissolved
	P-33-274.6 (Total also MS/MSD)	F3L120339008	Ni Dissolved, Ni Total
	P-33-284.6	F3L120339009	Ni Dissolved
	P-33-294.6	F3L120339010	Ni Dissolved, Ni Total
	P-33-304.6	F3L120339011	Ni Dissolved, Ni Total
	P-33-DUP-2 (P-33-304.6)	F3L120339012	Ni Dissolved, Ni Total
	P-33-344.3	F3L120339013	Ni Dissolved
	P-33-374.3 (Dissolved also MS/MSD)	F3L120339014	Ni Dissolved, Ni Total
	P-33-412.4	F3L120339015	Ni Dissolved, Ni Total
F3L160348	P-33-423.8	F3L160348001	Ni Dissolved
	P-33-432.6	F3L160348002	Ni Dissolved, Ni Total
	P-33-454.3	F3L160348003	Ni Dissolved
	P-33-481.1 (Dissolved also MS/MSD)	F3L160348004	Ni Dissolved, Ni Total

Table 1-1: Sample Cross-Reference List			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F4A130259	P-31-79.25	F4A130259002	Ni Dissolved
	P-31-89.25	F4A130259003	Ni Dissolved
	P-31-99.25	F4A130259004	Ni Dissolved
	P-31-111.67	F4A130259005	Ni Dissolved
	P-31-EB-2 (also MS/MSD)	F4A130259006	Ni Total
	P-31-124.25	F4A130259007	Ni Dissolved
	P-31-134.25	F4A130259008	Ni Dissolved
	P-31-143.30	F4A130259009	Ni Dissolved
	P-31-184.25	F4A130259010	Ni Total
	P-31-190.40	F4A130259011	Ni Dissolved
	P-31-DUP-1 (P-31-190.40)	F4A130259012	Ni Dissolved
	P-31-199.25 (also MS/MSD)	F4A130259013	Ni Dissolved
	P-31-223.75	F4A130259014	Ni Dissolved
	P-31-233.11	F4A130259015	Ni Dissolved, Ni Total
	P-31-244.25	F4A130259016	Ni Dissolved
	P-31-254.25	F4A130259017	Ni Dissolved
	P-31-263.70	F4A130259018	Ni Dissolved
	P-55-EB-1	F4A130259019	Ni Dissolved, Ni Total
	P-55-74.55	F4A130259020	Ni Dissolved
	P-55-84.10	F4A130259021	Ni Dissolved, Ni Total
	P-55-94.55	F4A130259022	Ni Dissolved, Ni Total
	P-55-104.55	F4A130259023	Ni Dissolved
	P-55-114.55	F4A130259024	Ni Dissolved, Ni Total
	P-55-DUP-1 (P-55-154.55)	F4A130259025	Ni Dissolved
	P-55-124.55	F4A130259026	Ni Dissolved
	P-55-134.55	F4A130259027	Ni Dissolved
	P-55-144.55	F4A130259028	Ni Dissolved, Ni Total
	P-55-154.55 (also MS/MSD)	F4A130259029	Ni Dissolved
	P-55-164.55	F4A130259031	Ni Dissolved
F4A150320	P-31-284.25	F4B150320001	Ni Dissolved, Ni Total
	P-31-294.25	F4B150320002	Ni Dissolved, Ni Total
	P-31-304.25	F4B150320003	Ni Dissolved
	P-31-344.25	F4B150320004	Ni Dissolved
	P-31-351.55	F4B150320005	Ni Dissolved
	P-31-DUP-2 (P-31-351.55)	F4B150320006	Ni Dissolved

Table 1-1: Sample Cross-Reference List			
Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F4A150320 Cont'd	P-55-174.55	F4B150320008	Ni Dissolved, Ni Total
	P-55-186.15	F4B150320009	Ni Dissolved
	P-55-244.40	F4B150320011	Ni Dissolved
	P-55-254.40	F4B150320012	Ni Dissolved
	P-55-264.40	F4B150320013	Ni Dissolved, Ni Total
	P-55-271.00	F4B150320014	Ni Dissolved
F4A230292	P-31-363.2	F4A230292001	Ni Dissolved
	P-31-374.25	F4A230292002	Ni Dissolved
	P-31-404.25	F4A230292003	Ni Dissolved, Ni Total
	P-56-EB-1	F4A230292004	Ni Dissolved, Ni Total
	P-56-76-55	F4A230292005	Ni Dissolved
	P-56-86.55	F4A230292006	Ni Dissolved, Ni Total
	P-56-96.55	F4A230292007	Ni Dissolved, Ni Total
	P-56-106.55	F4A230292008	Ni Dissolved, Ni Total
	P-56-116.55	F4A230292009	Ni Dissolved, Ni Total
	P-56-126.55	F4A230292010	Ni Dissolved
	P-56-136.55 (also MS/MSD)	F4A230292011	Ni Dissolved
	P-56-146.55	F4A230292012	Ni Dissolved, Ni Total
	P-56-156.55	F4A230292013	Ni Dissolved
	P-56-166.55	F4A230292014	Ni Dissolved
	P-56-176.55	F4A230292015	Ni Dissolved
	P-56-186.55	F4A230292016	Ni Dissolved
	P-56-194.40	F4A230292017	Ni Dissolved
	P-31-414.25	F4A230292018	Ni Dissolved
	P-56-DUP (P-56-86.55)	F4A230292019	Ni Dissolved, Ni Total
F4A300327	P-31-444.25	F4A300327001	Ni Dissolved
	P-55-294.45	F4A300327002	Ni Dissolved
	P-55-304.45	F4A300327003	Ni Dissolved, Ni Total
	P-55-311.95	F4A300327004	Ni Dissolved, Ni Total
	P-55-DUP-2 (P-55-311.95)	F4A300327005	Ni Dissolved, Ni Total
	P-55-334.55 (Total also MS/MSD)	F4A300327006	Ni Dissolved, Ni Total
	P-55-340.35	F4A300327007	Ni Dissolved, Ni Total
	P-55-374.35	F4A300327008	Ni Dissolved
	P-56-388.60	F4A300327010	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F4A300327 Cont'd	P-55-EB-3	F4A300327011	Ni Total
	P-56-211.45	F4A300327012	Ni Dissolved, Ni Total
	P-56-221.45	F4A300327013	Ni Dissolved, Ni Total
	P-56-231.45	F4A300327014	Ni Dissolved
	P-56-241.45	F4A300327015	Ni Dissolved
	P-56-251.45	F4A300327016	Ni Dissolved
	P-56-261.45	F4A300327017	Ni Dissolved
	P-56-305.90	F4A300327018	Ni Dissolved
	P-56-316.45	F4A300327019	Ni Dissolved, Ni Total
	P-56-324.20 (also MS/MSD)	F4A300327020	Ni Dissolved
	P-56-346.60	F4A300327060	Ni Dissolved
	P-56-354.00	F4A300327022	Ni Dissolved
F4B110140	P-55-404.45 (also MS/MSD)	F4B110140001	Ni Dissolved
	P-55-425.35	F4B110140002	Ni Dissolved
	P-55-434.45	F4B110140003	Ni Dissolved, Ni Total
	P-55-442.25	F4B110140004	Ni Dissolved, Ni Total
	P-32-79.95	F4B110140005	Ni Dissolved
	P-32-89.35	F4B110140006	Ni Dissolved
	P-32-99.35	F4B110140007	Ni Dissolved
	P-32-109.35	F4B110140008	Ni Dissolved
	P-32-119.35	F4B110140009	Ni Dissolved
	P-32-128.75	F4B110140010	Ni Dissolved
	P-32-139.35	F4B110140011	Ni Dissolved
F4B130279	P-32-174.35	F4B130279001	Ni Dissolved
	P-32-DUP-1 (P-32-174.35)	F4B130279002	Ni Dissolved
	P-32-184.35	F4B130279003	Ni Dissolved
	P-32-194.35	F4B130279004	Ni Dissolved
	P-32-224.35 (Total also MS/MSD)	F4B130279005	Ni Dissolved, Ni Total
	P-32-234.35	F4B130279006	Ni Dissolved, Ni Total
	P-32-241.01	F4B130279007	Ni Dissolved, Ni Total
	P-32-251.77	F4B130279008	Ni Dissolved
	P-32-259.35	F4B130279009	Ni Dissolved, Ni Total
	P-32-269.35	F4B130279010	Ni Dissolved, Ni Total
	P-32-279.35	F4B130279011	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F4B170134	P-32-289.35 (Dissolved also MS/MSD)	F4B170134002	Ni Dissolved, Ni Total
	P-32-299.35	F4B170134003	Ni Dissolved
	P-32-309.35	F4B170134004	Ni Dissolved, Ni Total
	P-32-352.0	F4B170134005	Ni Dissolved, Ni Total
	P-32-359.25	F4B170134006	Ni Dissolved
	P-32-369.25	F4B170134007	Ni Dissolved
	P-32-379.25	F4B170134008	Ni Dissolved
	P-32-387.80	F4B170134009	Ni Dissolved
	P-32-DUP-2 (P-32-359.25)	F4B170134010	Ni Dissolved
F4B200226	P-32-411.3	F4B200226001	Ni Dissolved
	P-32-419.3	F4B200226002	Ni Dissolved, Ni Total
	P-32-426.7	F4B200226003	Ni Dissolved, Ni Total
	P-32-461.0	F4B200226004	Ni Dissolved, Ni Total
	P-32-481.0	F4B200226005	Ni Dissolved, Ni Total
	P-32-488.9	F4B200226006	Ni Dissolved, Ni Total
	P-32-DUP-3 (P-32-488.9) (Dissolved also MS/MSD)	F4B200226007	Ni Dissolved, Ni Total

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report summarizes the findings of the review and outlines any deviations from the applicable quality control (QC) criteria referenced in the following documents:

- *Analytical Services Protocol,* New York State Department of Environmental Conservation. Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.

- GTE Operations Support Incorporated (GTEOSI). *Groundwater Investigation Work Plan (QAPP: Appendix C), Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* URS, September 2002.

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* (SW-846) USEPA, Final Update IIIA. April 1998.

- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* EPA 540-R-01-008. July 2002.

1.3. Analytical Methods

The environmental samples presented in this report were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for selected metals, including nickel, analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW-846 Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by FLAA or ICP Spectroscopy
- SW-846 Method 6010B: Inductively Coupled Plasma-Atomic Emission Spectrometry
- SW-846 Method 7196A: Chromium, Hexavalent (Colorimetric)

The laboratory assigned an SDG number to a group of samples during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and QC analyses. A total of 1,123[9] samples in a total of 64 SDGs are included in this data validation report. Of the 1,123 total number of samples, 14 were analyzed for total beryllium, 23 for total chromium, 7 for hexavalent chromium, 14 for total copper, 14 for total thallium, 499 for total nickel, 804 for dissolved nickel, and 24 for unspecified[10] nickel. The SDG, field identification, and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. Section 3 presents a summary of the findings associated with the validation and a discussion of the specific QA/QC deviations and qualifications performed on the sample data. Section 4 presents a discussion of data completeness and usability. Section 5 presents the Data Usability Summary Report (DUSR) summary information.

[9] Each sample may have been analyzed for more than one metal and may have included total recoverable and dissolved fractions.
[10] It was not specified whether total or dissolved nickel was collected.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (GTEOSI, 2002), the analytical methodologies, the data validation guidelines referenced in Section 1, and professional judgment[11]. MPI performed a data review of all analytical results to assess data quality. A data review includes an assessment of sample handling protocols and supporting laboratory and field QC parameters. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements
- Analytical methods performed and test method references
- Sample condition - review of log-in records for cooler temperature, chemical preservation, etc.
- Holding times - comparison of collection, preparation, and analysis dates
- Analytical results - units, values, significant figures
- Sample traceability to raw data
- Initial calibration – comparison to technical guideline criteria
- Continuing calibration – comparison to technical guideline criteria
- Initial and continuing calibration blanks
- Method blank results and laboratory contamination
- Laboratory control sample (LCS) results and comparison to laboratory control limits
- Matrix spike/matrix spike duplicate (MS/MSD) results and comparison to laboratory control limits
- Matrix duplicate analyses
- Field replicate/duplicate results and comparison to technical guideline criteria
- Field QC sample (i.e., equipment blanks and field blanks)
- Reporting limits and Dilutions
- Electronic Data Deliverables (EDDs) – comparison to the hardcopy analytical report

The analytical reports were reviewed for completeness and the accompanying QC data were reviewed for acceptable performance. When QC results indicated poor performance, MPI applied data qualifiers to the

[11] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

results to inform the data user of the possible performance problem. These qualifiers are in addition to or a revision of the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory for metals analyses:

"U" Non-detect result at the established laboratory reporting limit.

“B” Indicates an estimated value or a value below the established reporting limit but above the method detection limit.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

“U” The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

“J” The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

“UJ” The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

“R” The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets Site-specific criteria for data quality and use. It was developed to review and evaluate the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

2. *Have all holding times been met?*

3. *Do all the QC data: blanks, calibration standards, calibration verifications, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?*

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

6. *Have the correct data qualifiers been used?*

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes whether the QA/QC parameters reported, which were specified in Section 2.1, met validation criteria. Summary of the individual components of the review are described in the following sub-sections.

3.2. Review of Validation Criteria

3.2.1. Completeness Review

The laboratory provided the analytical report using Contract Laboratory Program (CLP) –like format. With the exception of forms and raw data detailed in Section 3.2.5, all necessary documents were included in the report packages including a case narrative summarizing the QC issues associated with the project analyses.

3.2.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. They included USEPA SW-846 Method 3010 (digestion of aqueous samples) followed by Method 6010B (ICP) for metals analysis, and Method 7196A for hexavalent chromium analysis. No method anomalies were noted.

3.2.3. Sample Receipt

The laboratory received 1,123 aqueous samples[12] for metals analysis between March 18, 2003 and February 20, 2003. Samples collected for different analysis from the same profile at the same depth are defined as the same sample within this data validation report. The sample temperatures at the time of receipt by the laboratory were within the recommended temperature range of 4°C ± 2°C for almost all SDGs. Field and laboratory personnel completed the chain-of-custody (COC) documents recording the signature, date, and time of custody transfer. The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This form identifies whether the containers were received undamaged, within the proper temperature range, at the proper pH, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory.

The following problems with sample receipts were found:

- SDG F3E290170: there was a sample container, which was not labeled – the laboratory resolved the sample identity through a process of elimination and informed MPI.
- SDG F3F030298: sample P-15-230.00 was not submitted but was on the COC; sample P-15-228.00 was not written on the COC but was submitted – the laboratory made corrections after contacting MPI. Also, samples P-D-207.1 and P-D-197.1 were preserved at the laboratory subsequent to checking the pH – no data validation qualifications are necessary.
- SDG F3F120220: samples P-C-159.6 and P-C-169.6 were crossed off the COC by accident. The samples were received by the laboratory in good condition.

[12] Each sample may have been analyzed for more than one metal and may have included total recoverable and dissolved fractions.

- SDG F3F260187: sample FB-6-24 was relabeled on the COC as P-23-FB1, but was not relabeled on one of the sample bottles.

- SDG F3G110256: sample P-35-DUP-1 was mistakenly documented as P-35-DUP-2 during the laboratory's sample log-in process, resulting in the wrong sample ID reported – the ID was manually corrected during the validation process.

- SDG F3G150156: three samples were received at the laboratory with no sample ID: two were identified based on sampling time, the other one was matched based on what was left on the COC as P-25-320.0 (this bottle's sampling time did not match any samples on the COC).

- SDG F3G250374: sample P-42-79.6 on the COC was labeled as P-42-79.5 on the sample bottle. The COC designation was used. Also, bottle for sample P-42-EB-2 was not received by the laboratory; and therefore, could not be analyzed.

- SDG F3G290207: sample P-42-336.8 was labeled as P-42-339.8 on the sample bottle; the laboratory data are labeled as P-42-339.8 – the ID was manually corrected during the validation process. The COC also had sample TB-724728 included, which was not submitted for analysis.

- SDG F3H060192: a labeled bottle for sample P-45-71.25 was received by the laboratory but was not included in the COC. The laboratory added the sample for nickel analysis on the COC.

- SDG F3H130195: samples P-45-291.65 and P-45-311.65 were mistakenly documented as P-45-291.25 and P-45-311.25, respectively, during the laboratory's sample log-in process, resulting in the wrong sample ID reported – the ID was manually corrected during the validation process.

- SDG F3H180106: all samples were received at the laboratory at 29 degrees Celsius. All of the ice within the shipping cooler had melted as it took Federal Express four days to deliver the cooler. No qualification actions are performed because the concentration of nickel is not expected to be affected with this increase in temperature.

- SDG F3H270230: the sample bottle labeled as P-37-265.85 is labeled as P-37-264.85 on the COC. The correct ID is P-37-265.85 and was manually corrected on the reports during this validation process.

- SDG F3H280315: samples P-46-330.21 and P-46-307.69 had Cr+6 requested on the COC; however, the laboratory was unable to perform the analysis because the samples received were preserved with HNO3.

- SDG F3I040177: sample P-44-79.3 was not listed on the COC. Also, sample P-44-109.8 required pH adjustment to <2 at the laboratory as the pH was received at 5. No validation qualification is necessary.

- SDG F3I090305: sample P-47-DUP-1 was not submitted but was on the COC. The analysis was not performed.

- SDG F3I230231: sample P-29-318.9 was mistakenly documented as P-29-389.9 during the laboratory's sample log-in process, resulting in the wrong sample ID reported – the ID was manually corrected during the validation process. Samples P-29-310.2 and P-29-360.0 for hexavalent chromium had already exceeded the 24 hour holding time by the time they were shipped to the laboratory.

- SDG F3J030259: samples P-30-89.50 and P-30-99.50 were mistakenly documented as P-30-89.55 and P-30-99.55, respectively, during the laboratory's sample log-in process, resulting in the wrong sample ID reported – the ID was manually corrected during the validation process. This SDG had both total and dissolved nickel samples. The laboratory only identified some of the dissolved samples as dissolved. The IDs were manually corrected to reflect total and dissolved samples during the validation process to maintain consistency for this SDG.

- SDG F3J070236: samples P-30-224.55, P-30-232.85, P-30-244.5, P-30A-260.85, P-30A-269.00, and P-18-EB-1 were labeled for dissolved nickel on the COC; however, the bottles were not labeled for dissolved or filtered. The laboratory correctly identified the samples as for dissolved. Sample P-30A-307.4 was requested for both dissolved and total nickel. The laboratory performed both analyses but had identified on both reports as total. One of them was hand corrected as dissolved, through the validation process, based on time of analysis in association with other dissolved nickel analysis.

- SDG F3J110172: samples P-18-257.65 and P-18-267.65 were labeled for dissolved nickel on the COC; however, the bottles were not labeled for dissolved or filtered. The laboratory correctly identified the samples as for dissolved.

- SDG F3J290103: sample P-51-295-25 was submitted for total nickel, in addition to the dissolved nickel that was specified on the COC. Both analyses were performed.

- SDG F3K080109: sample P-54-EB-1 was received for total and dissolved nickel but was not listed on the COC. The laboratory added it onto the COC.

- SDG F3K110173: sample P-54-267.95 was mistakenly documented as P-54-268.95 during the laboratory's sample log-in process, resulting in the wrong sample ID reported; the ID is manually corrected during the validation process. Samples P-58-304.65 and P-58-402.40 were not at the correct pH when received at the laboratory; the laboratory preserved it at receipt. The laboratory did not document the specific fraction - no data validation qualifications are necessary.

- SDG F3K210372: sample P-53-86.40 was mistakenly documented as P-54-86.40 during the laboratory's sample log-in process, resulting in the wrong sample ID reported; the ID was manually corrected during the validation process.

- SDG F3L090146: sample P-53-426.75 was identified as total on the COC and as filtered on the sample container. The laboratory correctly identified it as total.

- SDG F4A230292: sample P-56-DUP was received for total and dissolved nickel but was not listed on the COC. The laboratory added it onto the COC.

- SDG F4A300327: sample P-56-388.60 was received for total and dissolved nickel and sample P-55-EB-3 was received for total nickel, but they were not listed on the COC. The laboratory added them onto the COC. Three samples were identified as for dissolved nickel on the COC but not on the sample bottles. The laboratory correctly identified them as dissolved for their analysis.

- SDG F4B110140: sample P-32-EB-1 for total nickel was submitted to the laboratory but was crossed off on the COC by mistake. The laboratory should have analyzed it but did not.

There were no custody seals attached to individual sample containers. No qualification is necessary because the exterior of the shipment coolers had intact custody seals. However, some cooler exteriors were noted to have no custody seals: SDGs F3F120220, F3F170126, F3F260187, F3G150156, F3I150101, F3L090146, F3L160348, and F3B200226. Based on professional judgment, no qualifications are performed because the custodies during shipment were maintained by Federal Express and the coolers were shipped over-night with early morning arrival at the laboratory.

3.2.4. Holding Times

The laboratory performed all beryllium, copper, nickel, thallium, and total chromium analyses within the EPA-recommended holding time of 180 days for acid preserved samples.

The holding time for hexavalent chromium is 24 hours from time of sample collection. Holding time for the following hexavalent chromium samples were not met:

- SDG F3I230231: samples P-29-310.2 and P-29-360.0. The samples were received outside of holding time. Since the hexavalent chromium results for these two samples were non-detects, the results were qualified as unusable, "R."
- SDG F3K110173: samples P-58-304.65 and P-58-402.40. The samples were received outside of holding time. Since the hexavalent chromium results for these two samples were non-detects, the results were qualified as unusable, "R."

3.2.5. Analytical Results

For each sample tested, the laboratory provided the analytical test information using a laboratory standard format, which shows critical information pertaining to the analyses performed. The information provided includes the following: the laboratory name; the project name; the analysis type; the laboratory sample ID; matrix; date sampled; date received; preparation batch ID; the result; the reporting limit; the units of measure; the laboratory method; dilution factor; analysis time; preparation date; analysis date; work order number, and laboratory qualifiers (if any). The laboratory provided all the appropriate forms for the requested methods with the following exceptions.

- SDG F3I040177: chromium calibration forms were not included. The chromium information missing in the calibration forms were found within the raw data.
- SDG F3K110173: hexavalent chromium calibration forms and raw data were not included.
- SDG F3K210372: five results for total nickel and four results for dissolved nickel analyses were mistakenly reported with the wrong values on the reporting forms (Form 1). The results were corrected from the raw data during the validation process.
- SDG F3J240204: sample P-51-177.78 was mistakenly logged in at the laboratory as P-49-177.78. The ID was manually corrected on the report form (Form 1) during the validation process.

3.2.6. Traceability to Raw Data

Traceability of the metals analyses is established by the digestion (preparation) logs. These forms list the project samples analyzed per laboratory batch processed and the corresponding QC samples (e.g., preparation blank and laboratory control sample) performed with the project samples. All project samples analyzed, for all SDGs, were included on the applicable forms.

3.2.7. Initial Calibration

The laboratory prepared an initial calibration (ICAL) curve for each analyte in accordance with method criteria. All ICALs are acceptable. Initial calibration verification (ICV) standards were analyzed immediately after each ICAL, with recoveries all within ± 10% of the true values for all analytes. All ICVs are acceptable.

3.2.8. Continuing Calibration Verification

The continuing calibration verification (CCV) standards were analyzed after the ICALs and after every 10 project samples as required by the reference test method. The percent recoveries were all within ± 10% of the true values for all analytes. All CCVs are acceptable.

3.2.9. Initial and Continuing Calibration Blanks

The initial calibration blank (ICB) and continuing calibration blanks (CCB) were analyzed after the ICALs and after every 10 project samples as required by the reference test method. In general, most initial and continuing calibration blank results were less than the laboratory reporting limit, but in a few cases the blank results were greater than the laboratory MDL or (-MDL). For these cases, if an analyte in the associated field samples was detected at a concentration greater than the MDL but less than the laboratory reporting limit, the validation process qualified the result to account for the potential contamination associated with the analysis system. A summary of the samples and analytes that were revised due to laboratory contamination are presented in Table 3-1.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3C190235	MW-10	Beryllium	Revise to "U" non-detect
F3D290160			None
F3E020153	P-F-96.48 P-F-106.46	Nickel	Revise to "U" non-detect
F3E090278			None
F3E140308	P-26-86.8 P-26-96.8 P-26-106.8 P-26-116.8 P-26-126.8 P-26-136.8 P-26-146.8	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3E160130			None
F3E230179			None
F3E200165			None
F3E290170			None
F3F030298			None
F3F050171			None
F3F120220			None
F3F170126			None
F3F180192			None

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3F200145			None
F3F260187	P-23-80.1 P-23-90.1 P-23-100.1 P-23-110.1 P-23-130.1 P-23-140.1 P-23-150.1 P-23-170.1 P-23-180.1 P-23-DUP-1	Nickel	Revise to “U” non-detect at PQL, for all detects < PQL.
F3F270132			None
F3G010309	P-23-262.0 P-23A-293.50	Nickel	Revise to “U” non-detect at PQL, for all detects < PQL.
F3G030162	P-23A-DUP.1 P-23A-347.6	Nickel	Revise to “U” non-detect at PQL, for all detects < PQL.
F3G110256	P-25-79.7 P-25-89.7 P-25-99.1 P-25-139.7 P-25-149.7 P-25-159.7 P-25-169.7 P-25-179.7 P-25-189.7 P-25-199.7 P-25-209.7 P-25-219.7 P-25-DUP-1 P-35-77.2 P-35-87.2 P-35-137.2 P-35-147.2 P-35-157.2 P-35-167.2 P-35-177.2 P-35-DUP-1	Nickel	Revise to “U” non-detect at PQL, for all detects < PQL.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3G150156	P-25-229.5 P-25-239.5 P-25-249.5 P-25-259.5 P-25-269.5 P-25-275.8 P-25-DUP-2 P-25-290.0 P-25-300.0 P-25-310.0 P-25-320.0 P-25-330.0 P-25-340.0 P-25-349.4 P-25-379.2 P-35-187.2 P-35-197.2 P-35-207.2 P-35-227.2 P-35-237.2 P-35-247.2 P-35-257.2 P-35-267.2 P-35-277.2 P-35-322.2 P-35-332.2 P-35-DUP-2 P-35-342.2 P-35-347.2	Nickel	Revise to “U” non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3G230216	P-H-76.8 P-H-86.8 P-H-106.8 P-H-116.8	Nickel	Revise to “U” non-detect at PQL, for all detects < PQL.
F3G250374	P-H-126.8 P-H-DUP1 P-H-136.8 P-H-146.8 P-H-156.8 P-H-166.8 P-H-176.8 P-H-186.8 P-42-189.6 P-42-197.7 P-42-202.7 P-42-DUP-1 P-42-99.6 P-42-109.6 P-42-139.6 P-42-149.6 P-42-159.6 P-42-169.4	Nickel	Revise to “U” non-detect at PQL, for all detects < PQL.
F3G290207	P-H-226.55	Nickel	Revise to “U” non-detect at PQL, for all detects < PQL.
F3H010243			None

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3H060192	P-20-79.60 P-20-89.60 P-20-99.60 P-20-109.60 P-20-119.60 P-45-81.25 P-45-91.25 P-45-101.25 P-45-111.25 P-45-121.25 P-45-131.25 P-45-DUP1	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3H080219	P-20-189.60 P-20-DUP1 P-45-151.25 P-45-167.25 P-45-197.25 P-45-207.25 P-45-217.25 P-45-227.25 P-45-237.25	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3H130195	P-20-359.60 P-20-379.60 P-20-369.60	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3H180106			None
F3H210288			None
F3H220246			None
F3H270230			None
F3H280315			None
F3I040177	P-44-89.8 P-44-99.3 P-44-DUP 1 P-44-109.8 P-44-121.55 P-44-79.3	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-46-389.28	Chromium	Revise to "U" non-detect at PQL, for all detects < PQL.
F3I050189	P-44-131.1 P-44-139.8 P-44-149.8 P-44-159.8 P-44-169.8 P-44-179.8 P-44-199.8 P-47-77.1 P-47-87.08	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3I090305			None
F3I120107			None
F3I150101			None
F3I180259			None

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*			
Package Identification	***Sample ID***	***Analyte***	***Action***
F3I230231	P-29-278.4 P-29-289.85 P-29-299.85 P-29-310.2 P-29-318.9 P-29-329.85 P-29-DUP-2 P-29-339.5 P-29-360.0 P-29-369.2 P-38-166.3 P-38-176.3 P-38-186.3 P-38-216.3 P-38-226.3 P-38-312.9 P-38-322.9 P-38-DUP-2 P-38-332.3 P-38-341.1 P-43-264.85 P-43-274.85 P-43-284.85	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-29-310.2	Chromium	Revise to "U" non-detect at PQL, for all detects < PQL.
F3I250196	P-38-370.1 P-38-381.3 P-38-391.3 P-38-DUP-3 P-29-410.7	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F3J030259	P-30-149.50	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3J070236	P-18-76.65 P-18-86.65 P-18-96.65 P-18-106.65 P-18-116.65 P-18-126.65 P-18-136.65 P-18-146.65 P-18-156.65 P-18-DUP-1 P-18-166.65 P-18-176.65 P-18-186.65	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3J110172			None
F3J240204	P-50-198.55 P-51-77.78 P-51-117.78 P-51-137.78 P-51-158.02	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3J290103			None
F3J310287	P-51-363.30 P-51-371.80	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*			
Package Identification	***Sample ID***	***Analyte***	***Action***
F3J310287 Cont'd	P-50-434.90 P-51-321.00 P-51-327.85 P-51-371.80 P-51-381.80	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3K080109	P-54-117.55 P-54-127.55 P-54-137.55 P-54-DUP-1 P-54-147.55 P-54-155.75 P-54-165.85 P-52-80.0 P-52-90.0 P-52-100.0 P-52-130.0 P-52-140.0 P-58-79.65	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-52-80.0 P-52-90.0 P-52-100.0 P-52-110.0 P-52-120.0 P-52-130.0 P-52-140.0 P-58-79.65 P-58-89.65 P-58-99.65 P-58-109.65 P-58-119.65 P-58-189.65	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3K110173	P-58-304.65 P-58-402.40	Chromium	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-58-314.65 P-58-323.15 P-54-256.55 P-54-276.4 P-54-285.4 P-54-296.25 P-54-303.55	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.
F3K140242			None
F3K210372	P-52-404.45 P-52-483.38 P-54-421.00 P-54-431.00 P-54-437.05 P-53-86.40 P-53-76.40	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3K280120	P-53-96.40 P-53-106.40 P-53-116.40 P-53-126.40 P-53-136.40 P-53-146.40 P-53-DUP-1 P-53-156.40 P-53-165.70 P-53-176.40 P-53-188.85 P-53-212.60 P-53-221.35 P-53-231.35 P-53-238.55	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F3L050365			None
F3L090146			None
F3L120339			None
F3L160348			None
F4A130259	P-55-94.55 P-55-114.55 P-55-144.55	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-31-79.25 P-31-89.25 P-31-111.67 P-31-124.25 P-31-134.25 P-31-190.40 P-31-DUP-1 P-31-223.75 P-31-233.11 P-31-263.70 P-55-94.55 P-55-104.55 P-55-114.55 P-55-DUP-1 P-55-124.55 P-55-134.55 P-55-144.55 P-55-154.55 P-55-164.55	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F4A150320	P-31-294.25 P-31-304.25 P-31-344.25 P-55-174.55 P-55-186.15	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL
F4A230292	P-31-404.25 P-56-116.55	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F4A230292 Cont'd	P-31-404.25 P-56-96.55 P-56-106.55 P-56-116.55 P-56-126.55 P-56-146.55 P-56-156.55 P-56-186.55 P-56-194.40 P-31-414.25	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL.
F4A300327	P-55-311.95 P-55-DUP-2 P-55-334.55 P-55-340.35 P-56-388.60	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL.
	P-55-304.45 P-55-311.95 P-55-DUP-2 P-55-334.55 P-55-340.35 P-55-374.35 P-56-388.60 P-56-211.45 P-56-221.45 P-56-241.45 P-56-251.45 P-56-316.45	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL
F4B110140	P-55-434.45 P-55-442.25	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL
F4B130279	P-32-224.35 P-32-234.35 P-32-241.01	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL
F4B170134			None
F4B200226	P-32-426.7	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL

3.2.10. Laboratory Method Blanks (Preparation Blanks)

There were contaminants detected in some preparation blanks. When contamination is detected, the corresponding project sample results for the identified contaminants were revised to non-detect if the associated sample results were less than five times the method blank results in accordance with the QAPP (GTEOSI, 2002). A summary of the samples and analytes that were revised due to laboratory contamination are presented in Table 3-2.

Table 3-2. *Evaluation of Laboratory Method Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3C190235			None
F3D290160			None
F3E020153			None
F3E090278			None
F3E140308			None
F3E160130			None
F3E230179			None
F3E200165			None
F3E290170			None
F3F030298			None
F3F050171			None
F3F120220			None
F3F170126			None
F3F180192			None
F3F200145			None
F3F260187			None
F3F270132			None
F3G010309			None
F3G030162			None
F3G110256	P-35-137.2* P-35-147.2* P-35-157.2* P-35-167.2* P-35-177.2* P-35-DUP-1*	Nickel	Revised to "U" (non-detect)

Table 3-2. *Evaluation of Laboratory Method Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3G150156	P-25-229.5* P-25-239.5* P-25-249.5* P-25-259.5* P-25-269.5* P-25-275.8* P-25-DUP-2* P-25-290.0* P-25-300.0* P-25-310.0* P-25-320.0* P-25-330.0* P-25-340.0* P-25-349.4* P-25-379.2* P-35-187.2* P-35-197.2* P-35-207.2* P-35-217.2 P-35-227.2* P-35-237.2* P-35-247.2* P-35-257.2* P-35-267.2* P-35-277.2* P-35-322.2* P-35-332.2* P-35-DUP-2* P-35-342.2* P-35-347.2*	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3G230216			None
F3G250374			None
F3G290207			None
F3H010243			None
F3H060192			None
F3H080219			None
F3H130195	P-20-359.60* P-20-379.60* P-20-369.60*	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3H180106			None
F3H210288			None
F3H220246			None
F3H270230			None
F3H280315			None
F3I040177			None
F3I050189			None

Table 3-2. *Evaluation of Laboratory Method Blanks*			
Package Identification	***Sample ID***	***Analyte***	***Action***
F3I090305	P-46-480.25 P-46-490.25 P-44-DUP-2 P-44-257.1 P-44-284.85 P-44-299.85 P-44-349.8 P-47-97.1	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3I120107			None
F3I150101			None
F3I180259			None
F3I230231			None
F3I250196			None
F3J070236	P-18-76.65 P-18-96.65 P-18-106.65 P-18-126.65 P-18-136.65 P-18-156.65 P-18-DUP-1 P-18-186.65	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3J110172			None
F3J030259			None
F3J240204	P-49-74.25 P-49-177.3	Nickel Total	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
	P-50-189.90 P-49-74.25 P-49-104.6 P-49-134.3 P-50-198.55* P-51-77.78*	Nickel Dissolved	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F3J290103			None
F3J310287	P-50-434.90* P-51-321.00* P-51-327.85* P-51-371.80* P-51-381.80*	Nickel Dissolved	Revised to "U" (non-detect)
F3K080109			None
F3K110173	P-58-304.65* P-58-402.40*	Chromium	Revised to "U" (non-detect)
F3K140242			None
F3K210372			None
F3K280120			None
F3L050365			None
F3L090146			None
F3L120339			None

Table 3-2. *Evaluation of Laboratory Method Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3L160348			None
F4A130259			None
F4A150320			None
F4A230292			None
F4A300327			None
F4B110140			None
F4B130279			None
F4B170134			None
F4B200226			None

* - Also qualified due to other types of blank contamination

3.2.11. Laboratory Control Sample Results

The laboratory analyzed an LCS for each QC batch. The percent recoveries were within laboratory control limits for all QC batches.

3.2.12. Matrix Spike Analyses

Matrix Spike (MS) or MS/MSD samples were submitted to the laboratory for analysis. The MS sample analysis is designed to provide information about the effects of a sample matrix on the sample preparation procedures and the measurement methodology. When the MS/MSD pair is performed, precision can also be measured. All percent recoveries (%R) and relative percent differences (RPD) were within criteria (75 = %R = 125; RPD = 20%) - no qualifications were required.

The laboratory performed an MS and Matrix Duplicate (MS/MD) pair for the first SDG (F3C190235), see Section 3.2.13. For all subsequent SDGs, the laboratory performed MS/MSD pairs, when performed. Both techniques offered similar QC indicators of accuracy and precision with respect to the sample matrices. Table 1-1 specified what technique was performed, and on which samples.

For the following, matrix effect of the samples for accuracy and precision was not evaluated:

- For SDGs F3E160130, F3E200165, F3F050171, F3G230216, F3H010243, F3I050189, and F3I250196, MS/MSDs were performed only on samples from other clients of the laboratory.
- For SDGs F3E230179, SDG F3F270132, F3G010309, F3G030162, F3H060192, F3H180106, and F3K210372, no MS/MSDs were performed.
- For SDG F3F260187, the laboratory performed MS/MSD on the field blank sample; MS/MSD should never be performed on field blank samples, as they offer no information on matrix effects of the actual field samples.
- For SDGs F3H220246 F3H270230, F3J240204, and F4A130259, the laboratory performed MS/MSDs on the equipment blank samples; MS/MSD should never be performed on equipment blank samples, as they offer virtually no information on matrix effects of the actual field samples.

Of the 1,123 samples submitted to the laboratory, 82 of them were also analyzed for MS/MSD. This represented a rate of 7.2 percent which exceeds the QAPP's minimum required rate of 5 percent.

3.2.13. Matrix Duplicate Analyses

One matrix duplicate (MD) sample was analyzed by the laboratory. The MD sample was analyzed in conjunction with the MS sample in place of the MS/MSD pair (see Section 3.2.12). The objective of the duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. An evaluation of the precision of the laboratory analysis procedure was made based on RPDs calculated for the original and duplicate sample results. Calculations were made only when both results were above the laboratory reporting limits. All MD RPDs were within the criterion of = 20% - no qualifications were required.

3.2.14. Field Duplicate Analyses

Seventy-four project samples were submitted as blind field duplicates. This represents 95 duplicate data points. By design, the laboratory was never made aware of which field samples the blind field duplicates were associated with. An evaluation of the precision of the field sampling procedure (as well as the laboratory analysis procedure) was made based on RPD calculated for the original and duplicate sample results. Blind field duplicate samples were collected and analyzed to assess the overall sampling and analytical precision. Evaluation calculations were made only when both results were above the laboratory reporting limits. The RPD values for most duplicates were within the criterion of = 30%.

- For SDG F3G290207, the RPD for the duplicate set (P-42-329.8 and P-42-DUP-2) was 83.6%. Since the sample results were less than 5 times
- (5X) the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F3I050189, the RPD for the duplicate set (P-46-409.34 and P-46-DUP-3) was 42.8%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F3J290103, the RPD for the duplicate set (P-49-340.8 and P-49-DUP-2) was 38.6%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F3K140242, the RPD for the duplicate set (P-52-364.2 and P-52-DUP-2) for total nickel was 61.3%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F3L120339, the RPD for the duplicate set (P-33-304.6 and P-33-DUP-2) for total nickel was 83.7%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F4B170134, the RPD for the duplicate set (P-32-359.25 and P-32-DUP-2) for dissolved nickel was 53.0%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

- For SDG F4B200226, the RPD for the duplicate set (P-32-488.9 and P-32-DUP-3) for total nickel was 35.1%. Since the sample results were less than 5X the laboratory's reporting limit, no qualification actions are taken, per the *National Functional Guidelines for Inorganic Data Review*. However, even though the associated batch samples are not qualified, the duplicate pair itself was qualified based on professional judgment.

It should be noted that QAPP requirements (GTEOSI, 2002) specified that a field duplicate sample be collected at a rate of one sample for every ten samples (collection rate of 10%). One-hundred-twenty-six (126) field duplicates data points were required to be collected for the project since a total of 1,255[13] project samples were submitted (not including other field QC samples collected) for analysis. The actual collection rate performed was equivalent to 7.6 percent[14]. Since an adequate number of field duplicate samples were not collected, the precision objective for the project was not in compliance. Table 3-3 shows the evaluation of field duplicate samples submitted.

Table 3-3. *Evaluation of Field Duplicate Samples*

Package Identification	***Sample ID***	***Analytes***	***Action***
F3C190235	MW-3		None
F3E090278	P-27-99.75		None
F3F030298	P-15-218.00		None
	P-D-217.1		None
F3F050171	P-D-321.95		None
F3F120220	P-C-99.6		None
F3F170126	P-C-320.3		None
F3F200145	P-24-167.3		None
	P-24-287.3		None
F3F260187	P-23-180.1		None
F3G030162	P-23A-347.6		None
F3G110256	P-25-179.7		None
	P-35-177.2		None
F3G150156	P-25-275.8		None
	P-35-332.2		None
F3G250374	P-H-126.8		None
	P-42-202.7		None
	P-H-206.55		None

[13] This number represents 1,350 (non-field blank/equipment blank) total data points minus 95 duplicate sample data points.
[14] Value = (95 duplicate data / 1,255 discrete sample data) X 100.

Table 3-3. *Evaluation of Field Duplicate Samples*			
Package Identification	***Sample ID***	***Analytes***	***Action***
F3G290207	P-42-329.8 P-42-DUP-2	Nickel	"J" (RPD > 30%)
F3H060192	P-45-81.25		None
F3H080219	P-20-169.60		None
F3H130195	P-20-427.99		None
F3H180106	P-45-366.39		None
F3H220246	P-36-15.7		None
	P-46-139.60		None
F3H270230	P-46-275.42		None
	P-37-304.8		None
F3I040177	P-44-99.3		None
F3I050189	P-46-409.34 P-46-DUP-3	Nickel	"J" (RPD > 30%)
F3I090305	P-44-239.85		None
	P-44-339.8		None
	P-47-163.9		None
	P-47-187.0		None
F3I120107	P-43-119.88		None
	P-47-317.0		None
F3I180259	P-29-109.5		None
	P-38-116.7		None
F3I230231	P29-329.85		None
	P-38-322.9		None
	P-43-246.68		None
F3I250196	P-38-381.3		None
F3J030259	P-30-204.55	Nickel Dissolved	None
	P-30-204.55	Nickel Total	None
F3J070236	P-30A-298.6	Nickel Dissolved	None
	P-30A-298.6	Nickel Total	None
	P-18-156.65	Nickel Dissolved	None
	P-18-156.65	Nickel Total	None
F3J110172	P-30A-406.55	Nickel Dissolved	None
	P-30A-406.55	Nickel Total	None
	P-18-247.65	Nickel Dissolved	None
	P-18-247.65	Nickel Total	None

Table 3-3. *Evaluation of Field Duplicate Samples*

Package Identification	***Sample ID***	***Analytes***	***Action***
F3J240204	P-50-129.90	Nickel Dissolved	None
	P-49-167.3	Nickel Dissolved	None
	P-51-97.78	Nickel Dissolved	None
F3J290103	P-50-342.60	Nickel Total	None
	P-50-342.60	Nickel Dissolved	None
	P-49-340.8 P-49-DUP-2	Nickel Dissolved	"J" (RPD > 30%)
	P-51-246.75	Nickel Dissolved	None
F3K080109	P-54-137.55	Nickel Total	None
	P-54-137.55	Nickel Dissolved	None
	P-52-170.0	Nickel Total	None
	P-52-170.0	Nickel Dissolved	None
	P-58-159.65	Nickel Dissolved	None
F3K110173	P-58-274.65	Nickel Total	None
	P-58-274.65	Nickel Dissolved	None
	P-54-267.95	Nickel Dissolved	None
F3K140242	P-54-351.25	Nickel Total	None
	P-52-364.2 P-52-DUP-2	Nickel Total	"J" (RPD > 30%)
	P-52-364.2	Nickel Dissolved	None
F3K280120	P-53-146.40	Nickel Total	None
	P-53-146.40	Nickel Dissolved	None
	P-53-266.35	Nickel Dissolved	None
	P-34-139.55	Nickel Total	None
	P-34-139.55	Nickel Dissolved	None
	P-34-244.55	Nickel Total	None
	P-34-244.55	Nickel Dissolved	None
F3L090146	P-33-169.6 P-33-DUP-1	Nickel Dissolved	"J" (RPD > 30%)
F3L120339	P-33-304.6 P-33-DUP-2	Nickel Total	"J" (RPD > 30%)
	P-33-304.6	Nickel Dissolved	None
F4A130259	P-31-190.40	Nickel Dissolved	None
	P-55-154.55	Nickel Dissolved	None
F4B150320	P-31-284.25	Nickel Dissolved	None
F4A230292	P-56-86.55	Nickel Total	None
	P-56-86.55	Nickel Dissolved	None

Table 3-3. *Evaluation of Field Duplicate Samples*			
Package Identification	***Sample ID***	***Analytes***	***Action***
F4A300327	P-55-311.95	Nickel Total	None
	P-55-311.95	Nickel Dissolved	None
F4B130279	P-32-174.35	Nickel Dissolved	None
F4B170134	P-32-359.25	Nickel Dissolved	"J" (RPD > 30%)
F4B200226	P-32-488.9	Nickel Total	"J" (RPD > 30%)
	P-32-488.9	Nickel Dissolved	None

3.2.15. Field Blanks and Equipment Blanks

A total of 9 field blanks and 40 equipment blank data points were performed as part of the samples submitted for this data validation report. Although this limited number of blanks was in compliance with the QAPP, it was slightly insufficient to fully evaluate field contaminations (false positives). A more appropriate frequency of blank collections should have been at a 5 percent rate or each time the sampling equipment was cleaned. Based on the 5 percent rate, 63[15] field blanks and/or equipment blank data points should been performed. The actual rate performed is 3.9 percent[16].

If an analyte was detected in the field blank or equipment blank, the associated field sample results were revised to non-detect if they were less than 10 times the blank result (when blank result > PQL), or to non-detect at the PQL value (when blank result < PQL). A summary of the samples and analytes that were revised due to field sampling contamination are presented in Table 3-4.

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*			
Package Identification	***Sample ID***	***Analyte***	***Action***
F3F260187	P-23-80.1* P-23-90.1* P-23-100.1* P-23-110.1* P-23-130.1* P-23-140.1* P-23-150.1* P-23-170.1* P-23-180.1* P-23-DUP-1*	Nickel	Revised to "U" (non-detect)

[15] Value = (1,350 (non-field blank/equipment blank) total data points minus 95 duplicate sample data points) X 0.05.
[16] Value = 49 / (1,350 (non-field blank/equipment blank) total data points minus 95 duplicate sample data points) X 100.

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3G110256	P-25-79.7* P-25-89.7* P-25-99.1* P-25-139.7* P-25-149.7* P-25-159.7* P-25-169.7* P-25-179.7* P-25-189.7* P-25-199.7* P-25-209.7* P-25-219.7* P-25-DUP-1* P-35-77.2* P-35-87.2* P-35-137.2* P-35-147.2* P-35-157.2* P-35-167.2* P-35-177.2* P-35-DUP-1*	Nickel	Revised to “U” (non-detect)
F3G030162	P-23A-DUP.1* P-23A-347.6*	Nickel	Revised to “U” (non-detect)
F3G230216	P-H-76.8* P-H-86.8* P-H-106.8* P-H-116.8*	Nickel	Revised to “U” (non-detect)
F3G250374	P-H-126.8* P-H-DUP1* P-H-136.8* P-H-146.8* P-H-156.8* P-H-166.8* P-H-176.8* P-H-186.8* P-42-189.6* P-42-197.7* P-42-202.7* P-42-DUP-1* P-42-99.6* P-42-109.6* P-42-139.6* P-42-149.6* P-42-159.6* P-42-169.4*	Nickel	Revised to “U” (non-detect)
F3G290207	P-H-226.55*	Nickel	Revised to “U” (non-detect)
F3H130195	P-20-359.60* P-20-379.60* P-20-369.60*	Nickel	Revised to “U” (non-detect)

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3H210288	P-36-76.7 P-36-86.7 P-36-96.7 P-36-106.7 P-36-116.7 P-36-126.7 P-36-136.7 P-46-79.60 P-46-89.60 P-46-99.60 P-46-109.60 P-46-119.60 P-46-129.60 P-37-79.3 P-37-89.95 P-37-99.95 P-37-109.95 P-37-119.95 P-37-129.95 P-37-139.95 P-37-149.95 P-37-DUP 1	Nickel	Revised to “U” (non-detect)
F3H220246	P-36-146.7 P-36-186.7 P-36-206.7 P-37-159.95 P-37-179.95 P-37-189.95	Nickel	Revised to “U” (non-detect)
F3H270230	P-36A-266.8 P-36A-282.0 P-36-236.7 P-36A-371.75 P-36A-328.4 P-37-314.8	Nickel	Revised to “U” (non-detect)
F3I230231	P-29-278.4* P-29-289.85* P-29-299.85* P-29-310.2* P-29-318.9* P-29-329.85* P-29-DUP-2* P-29-339.5* P-29-360.0* P-29-369.2* P-38-166.3* P-38-176.3* P-38-186.3* P-38-216.3* P-38-226.3* P-38-312.9* P-38-322.9* P-38-DUP-2* P-38-332.3* P-38-341.1* P-43-264.85* P-43-274.85* P-43-284.85* P-43-294.85 P-43-304.85	Nickel	Revised to “U” (non-detect)

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F3J070236	P-18-76.65* P-18-86.65* P-18-96.65* P-18-106.65* P-18-116.65* P-18-126.65* P-18-136.65* P-18-146.65* P-18-156.65* P-18-DUP-1* P-18-166.65* P-18-176.65* P-18-186.65*	Nickel Dissolved	Revised to "U" (non-detect)
	P-18-76.65* P-18-96.65* P-18-106.65* P-18-126.65* P-18-136.65* P-18-156.65* P-18-DUP-1* P-18-186.65*	Nickel Total	Revised to "U" (non-detect)
F3K080109	P-54-117.55 * P-54-127.55 * P-54-137.55 * P-54-DUP-1 * P-54-147.55 * P-54-155.75 * P-54-165.85 * P-52-80.0 * P-52-90.0 * P-52-100.0 * P-52-130.0 * P-52-140.0 * P-58-79.65 *	Nickel Total	Revised to "U" (non-detect)
	P-54-97.55 P-54-127.55 P-54-137.55 P-54-155.75 P-54-165.85 P-52-80.0 * P-52-90.0 * P-52-100.0 * P-52-110.0 * P-52-120.0 * P-52-130.0 * P-52-140.0 * P-58-79.65 * P-58-89.65 * P-58-99.65 * P-58-109.65 * P-58-119.65 * P-58-189.65 *	Nickel Dissolved	Revised to "U" (non-detect)
F3K210372	P-53-86.40 P-53-76.40	Nickel Total	Revised to "U" (non-detect)

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*			
Package Identification	***Sample ID***	***Analyte***	***Action***
F3K210372 Cont'd	P-52-404.45* P-52-483.38* P-54-421.00* P-54-431.00* P-54-437.05* P-53-86.40* P-53-76.40*	Nickel Dissolved	Revised to "U" (non-detect)
F3K280120	P-53-96.40 P-53-106.40 P-53-116.40 P-53-146.40 P-53-DUP-1 P-53-165.70 P-53-188.85 P-53-212.60 P-34-79.55 P-34-89.55 P-34-99.55 P-34-129.55 P-34-139.55 P-34-DUP-1 P-34-164.55 P-34-154.55 P-34-184.55 P-34-194.55 P-34-204.55 P-34-214.55 P-34-224.55 P-34-234.55 P-34-244.55 P-34-DUP-2 P-34-254.55 P-34-264.55 P-34-304.50 P-53-340.05	Nickel Total	Revised to "U" (non-detect)
F4A130259	P-55-94.55* P-55-114.55* P-55-144.55*	Nickel Total	Revised to "U" (non-detect)
	P-31-79.25* P-31-89.25* P-31-111.67* P-31-124.25* P-31-134.25* P-31-190.40* P-31-DUP-1* P-31-223.75* P-31-233.11* P-31-263.70* P-55-94.55* P-55-104.55* P-55-114.55* P-55-DUP-1* P-55-124.55* P-55-134.55* P-55-144.55* P-55-154.55* P-55-164.55*	Nickel Dissolved	Revised to "U" (non-detect)
F4A230292	P-31-404.25* P-56-116.55*	Nickel Total	Revised to "U" (non-detect)

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Analyte***	***Action***
F4A230292 Cont'd	P-31-404.25* P-56-96.55* P-56-106.55* P-56-116.55* P-56-126.55* P-56-146.55* P-56-156.55* P-56-186.55* P-56-194.40* P-31-414.25*	Nickel Dissolved	Revised to "U" (non-detect)
F4A300327	P-55-311.95* P-55-DUP-2* P-55-334.55* P-55-340.35* P-56-388.60*	Nickel Total	Revised to "U" (non-detect)
	P-55-304.45* P-55-311.95* P-55-DUP-2* P-55-334.55* P-55-340.35* P-55-374.35* P-56-388.60* P-56-211.45* P-56-221.45* P-56-241.45* P-56-251.45* P-56-316.45*	Nickel Dissolved	Revised to "U" (non-detect)

* - Also qualified due to other types of blank contamination

3.2.16. Quantitation of Results

The laboratory reporting limits for the metals were in accordance with the NYSDEC requirements (i.e., reporting at the Practical Quantitation Limits specified in the QAPP). The laboratory reported estimated data below the laboratory reporting limit but above the laboratory MDL, and qualified the estimated data with a "B" qualifier. The validation process revised the "B" qualifier to a "J" qualifier to provide consistency for others in review of the validated database.

3.2.17. Electronic Data Deliverables

The results in electronic database, for most samples, matched results listed on the hardcopy analytical report including laboratory qualifiers. Since the electronic deliverables were received in Microsoft Access database formats and were subsequently transferred to Microsoft Excel spreadsheet tables for presentation, it was not determined where the error was. However, all discrepancies have been corrected for the data tables in the Groundwater Investigation Report and the Access database. The qualifiers and results were revised based on quality control issues, and foundation for changes are listed in previous sections of this DUSR. The qualifiers were also placed onto the hardcopy reporting forms located near the beginning of each deliverable package (i.e., SDG package).

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 99.7 percent[17] of the metal data were determined to be usable. However, those sample results qualified as estimated, "J" and "UJ," due to data validation QC exceedances should be considered conditionally usable for qualitative and quantitative purposes.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, in the data validation guidelines listed in Section 1.2, in the QAPP (GTEOSI, 2002) established for this project, and by professional judgment. Major deficiencies in the data generation process have resulted in the rejection of four hexavalent chromium data points, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration of the analyte, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PSARCC) parameters. Completeness has been discussed above.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. For the metals analyses, none of the data were rejected due to precision non-conformances. However, the frequency of duplicate sample collection was insufficient, and therefore, evaluation of this criteria may not be adequate.

LCS, MS, and MSD recoveries indicate the accuracy of the data. For the metals analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte quantification are indicators of the representativeness of the analytical data. Four of the hexavalent chromium data were rejected due to representativeness non-conformances.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. None of the metals data were rejected due to sensitivity non-conformances.

[17] Value = ((1,399 all data points – 4 unusable data points) / 1,399 all data points) X 100.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets Site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

   The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met with the exception of some missing forms as discussed in Sections 3.2.1 and 3.2.5. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. *Have all holding times been met?*

   The holding times were met for all with the exception of four analyses for hexavalent chromium. These results were qualified as unusable.

3. *Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?*

   The laboratory used laboratory control limits. QA/QC deviations and qualifications performed on the sample data are discussed in Chapter 3. With the exception of holding-time for four hexavalent chromium samples, major non-conformances were not detected for the data. However, the low frequency of replicate (duplicate) analyses was not in compliance with the QAPP.

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

   The QAPP required that USEPA guidance methods be used in the analysis of the samples. The laboratory used the required method protocols for the analyses performed for this sampling event, which met data user and client needs.

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

   The evaluation of selected raw data confirmed all information provided in the data packages with the exception of some minor discrepancies as discussed in Section 3.2.5. These discrepancies were corrected.

6. *Have the correct data qualifiers been used?*

   The laboratory applied the correct qualifiers to the sample data. The laboratory qualifiers were revised and/or new qualifiers applied as required by the validation guidelines listed in Section 1. The validation guideline qualifier definitions are listed in Section 2.2.

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ENVIRONMENTAL INVESTIGATION
PROPERTY LOCATED AT
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I. INTRODUCTION

EEA, Inc. has undertaken an environmental investigation of the property at 140 Cantiague Rock Road in Hicksville, New York. This parcel is located on the east side of Cantiague Rock Road between West John Street and Barry Drive. It is presently occupied by Ventarama Skylight Corporation and American Art Service.

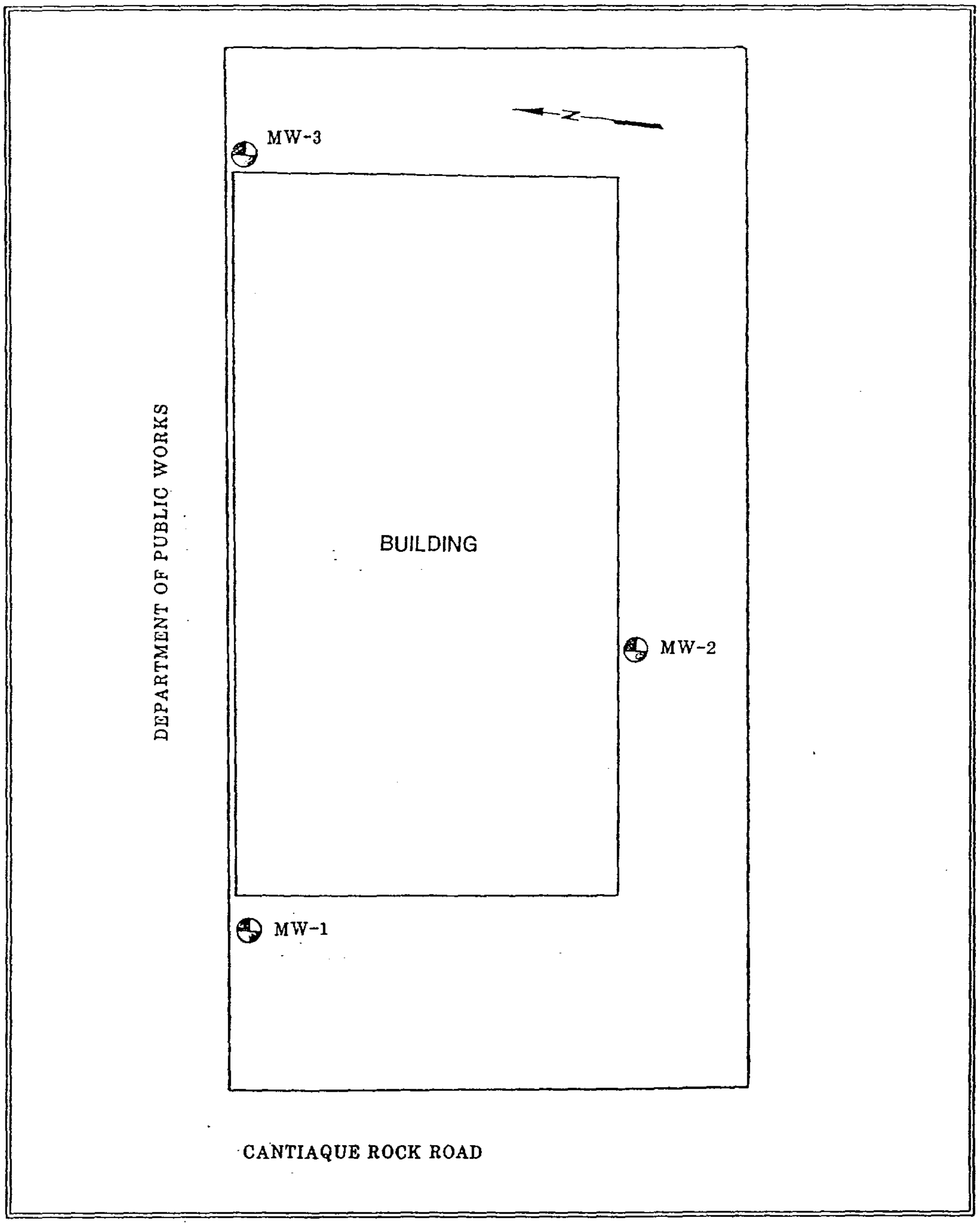
The purpose of this environmental audit is the identification of significant environmental problems (concerning toxic and hazardous materials contamination) that might restrict property use or create financial liability for the current or future owners of the site. Conditions creating such liability can include regulatory non-compliance, past disposal practices, spills, contamination from off-site sources, and impacts on sensitive off-site receptors. This study investigates such potential sources of contamination in its evaluation of the property through visual inspection, historical research, and regulatory checks; additional soil and groundwater testing was undertaken as the result of initial findings.

The recommendations stemming from the findings are summarized in Section II, below. The detailed description of audit findings is presented in Section III. The scope of work is outlined in Section IV.

II. FINDINGS, SUBSURFACE SAMPLING RESULTS AND CONCLUSIONS

Some evidence for potential soil and groundwater contamination has been found as a result of underground storage tank leaks at an adjacent property. The Nassau County Department of Public Works and Shop Facility (with buried storage tanks) at 170 Cantiague Rock Road, is located adjacent to the north of the subject property. Because major leaks have occurred from the buried tanks at this location, these may be a source of significant contamination (past and future) to the soil and groundwater at the subject property.

The subject property is located approximately 1/4-mile north of an area of Hicksville with documented groundwater contamination. A Superfund site, nine CERCLIS sites, and nine Inactive Hazardous Waste Disposal sites (six of which are CERCLIS sites) have been identified within a mile of the subject property (see Sections K.i.a., K.i.b., and K.ii. of this report). This area has been industrialized since the late 1940s; unchecked industrial discharge has contributed to the existing contamination of groundwater in



Monitor Well Sampling Points *Figure 1* this area, as described in the 1986 report entitled <u>Investigation of Contaminated Aquifer Segments</u>, discussed in Section K.iii of this report.

It is unlikely that the subject property's soil and groundwater have been contaminated from these sources, due to their distances from the subject property, and the reported direction of groundwater flow. However, as mentioned previously, large leaks from underground tanks at the adjacent property (170 Cantiague Rock Road) may have contaminated the subject site.

A review of the Nassau County Department of Health records has shown that an estimated 50,000 gallons of gasoline and fuel oil have leaked out of their underground storage tanks (see Section K.iii.).

Because of the reported leaks and groundwater contamination at this adjacent site, EEA has undertaken soil and groundwater testing at the subject property for volatile organic chemicals, (EPA Methods 601, 602, 8010, and 8020), gasoline and total petroleum hydrocarbons (Standard Methods 15 SM503 A,E).

Results of groundwater and soil sampling have indicated that contamination is present in sampling locations MW-1 and MW-2. Monitor well testing of MW-1 have indicated the presence of a thin layer of floating petroleum product on the watertable. MW-2 has no floating product but has dissolved contamination present. MW-3 was free of any contamination.

This contamination is probably originating from the spills on DPW property. Groundwater flow direction is southerly in this area. Any plume of petroleum product would travel in a southerly direction and would pass across the southern half of the property.

Results of the laboratory analyses is presented in the table below. The laboratory data sheets, chain of custody report and soil boring reports are located in the Appendix to this report.

Results of Sampling

		Analytical Parameters (ug/kg)[2]			
Sampling Location	Total Petroleum Hydrocarbons (mg/kg)[1]	Benzene	Toluene	Ethyl Benzene	Total Xylene
MW-1	28,000	ND	4	ND	3
MW-2	223	ND	2	ND	3
MW-3	ND	ND	ND	ND	ND

1 - Total Petroleum Hydrocarbons sampled from soils at the soil/groundwater interface; mg/kg - parts per million

2 - Groundwater samples; ug/kg - parts per billion

ND - Not detected above laboratory method detection limits

Figure 1 shows the location of the monitor well sampling points on the subject property.

Friable asbestos-containing insulating materials have been found in the subject building.

The following recommendations are made to help reduce the potential for future contamination of property soils, or of the building by asbestos, and to bring this facility into regulatory compliance with respect to the storage of toxic and hazardous materials.

- If it has not already been done, obtain a Department of Health Hazardous Materials Storage Facility Permit (Nassau County Public Health Ordinance, Article XI registration) Registration is required when more than 27.5 gallons of toxic or hazardous waste is stored at the site (i.e., waste oil).

- Remove friable asbestos containing material as identified in Section G. Approximately 55 linear feet of pipe lagging should be removed. Abatement of ACM must be performed in accordance with the New York State Department of Labor regulations 12NYCRR Part 56 to avoid contaminating the building.

Abatement costs depend on the accessibility of the ACM, local labor costs, and the competitiveness of the bidding.

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III. REPORT OF FINDINGS

A. Property Description

The subject property is located on the east side of Cantiague Rock Road, between West John Street and Barry Drive in Hicksville, Nassau County (see Figure 1).

Tax map identification of this parcel is: Section 11, Block 499, Lot 100.

The site is occupied by an industrial building with some office space. This 1-story brick, cinder block, and steel frame building has approximately 54,500 square feet of floor space.

The remaining area of the property consists of a paved parking area, located along the front, rear and south side yards.

The current occupants of the property are Ventarama Skylight Corporation and American Art Service. Ventarama Skylight Corporation manufactures, distributes, and sells skylights. American Art Service, which occupies a small office area for its advertising business, is part of Ventarama Skylight Corporation.

B. Site History

Primary sources for the history of Nassau County Town of Oyster Bay sites include the records of the Building Department of the Town of Oyster Bay, and Nassau County Tax Assessors Office concerning permits for new buildings, certificates of occupancy, alterations and other changes at the site.

Reverse telephone directories such as those published by Cole provide annual listings of occupants (with telephone service) from 1971 to the present.

i). Building Department and Tax Assessor's Records

The Town of Oyster Bay Building Division has the following Certificates of Occupancy (COs) and records of major alterations on file for the subject property:

Year Completed	CO No./ Permit No.	Structure/Use
1968	Permit C9094	1-story industrial building
1969	Permit D2317	"16 gas unit heater"
1972	CO 36314	Interior alteration
1975	CO 40545	Addition to existing building

1983	A4929	Interior alterations (woodshop, compressor room)
1988	A16121	1-story addition; install 6 dry wells per code

Tax Assessor's and building department records indicate that the original building was built in 1968. Two additions were made to the existing industrial building, one in 1975 and another in 1988.

ii). Address Directories

Listings for the subject property from selected years of Cole address directories (1971 to 1990) are presented in the following table:

Occupant	Directories Listed
Eaton Yale and Towne	1971, 1975, 1979
Yale Industrial Trucks	1979
Ventarama Skylight	1983, 1986, 1988, 1990
American Art Service	1988, 1990

iii). Interviews

According to Mr. Stephen K. Bechtold, President of Ventarama Skylight Corporation, Eaton Yale occupied the building from just after its construction in the mid-1960s, until Ventarama moved into the building in 1982. Eaton Yale was a business involved with the refurbishing of forklifts.

iv). Summary of History of Use

Information from interviews, address directories, Tax Assessor's records and building department records indicates that the present structure has been on the property for 22 years since its construction in 1968.

Past occupants of the structure have included Eaton Yale and Towne, and Yale Industrial Trucks.

Of these past uses, Eaton Yale and Towne, and Yale Industrial Trucks are types of businesses known to store, use or produce significant quantities of toxic or hazardous materials, specifically, waste oil, oil sludge, and degreasing solvents. However, Nassau County Department of Health files indicate that these wastes were picked up for recycling (see Section K.iv.). Therefore, it is unlikely that significant amounts of such materials were disposed of into property cesspools.

C. Site Characteristics

The subject property was inspected by EEA, Inc. investigators Leslie Nichtern and Ron Trapane on December 18, 1990. Mr. Stephen Bechtold of Ventarama Skylight Corporation was present to give access to all areas of the site, and to answer questions concerning the present use of the building and property. The findings of this inspection, and our regulatory agency checks, are presented in the following sections.

i). Site Topography and Drainage

The local topography is level. Precipitation from the building rooftop and parking lots runs to six on-site dry wells located in the parking areas along the front, south side, and rear yards of the property. It is unlikely that significant storm water runoff would come from adjacent properties.

The building and property grounds were inspected for the presence of floor drains, machinery waste discharge connections, or any other drainage structures, which may provide routes of hazardous and toxic materials to surface soils, septic or sewer systems. (Lavatory fixtures are not included.)

Following is a list of these drainage structures, observed at the time of the inspection.

Structure	Location	Water Dest.
floor drain	air compressor room	unknown, possibly to sewer
floor drain	warehouse, near loading dock	unknown, possibly to sewer
6 dry wells	parking lot	sewer

Sewage is discharged to the municipal sewage system. The building has been hooked up to this system since 1983, according to Russ Rinchuso of the Nassau County Sewer Permits Division.

Previously, sewage had been discharged to three on-site cesspools, according to Mr. Bechtold. Discharge had been made to these cesspools since the building's construction in 1968, until the hook-up to sewers in 1983. The six parking lot dry wells were added with the new building extension in 1988, according to the Oyster Bay Building Division.

There were no signs of other drainage structures on the subject property (i.e., catch basins, septic tanks, leaching pools, etc.).

ii). Class V Injection Wells

Under the Safe Water Drinking Act (sections 1421, 1422, 40 CFR 144), the U.S. Environmental Protection Agency (USEPA) administers the Underground Injection Control Program, which regulates Class V Injection Wells.

Class V Injection Wells are defined as "any bored, drilled, or driven shaft, or dug hole, whose depth is greater than its largest surface dimension," that is not connected to the sewer system. Examples include storm water drainage wells, industrial drainage wells, cooling water return flow wells, industrial process water wells, repair bay drains, recharge wells, cesspools, septic systems with a minimum capacity of 1,500 gpd. Such wells have the potential to contaminate soils and groundwater from surface run-off or disposal of toxic or hazardous substances, and as such may require a permit from the USEPA.

The Nassau County Department of Health should be contacted to obtain permit information for any such wells on the subject property.

iii). Industrial Waste Water Discharge

No industrial waste water discharge is made into the local sanitary sewer system.

iv). Building and Heating Systems

The building has one floor (with a 2-office mezzanine) which is used as office space, a cafeteria room, machine room, manufacturing and assembly area, and warehouse.

The entire building, excluding the mezzanine office, is heated by four gas-fired forced hot air heaters. The office is heated and cooled by a gas-fired rooftop heating, ventilating, and air conditioning system. The two mezzanine offices are heated and cooled by individual wall units. In the front offices, electric baseboard heaters are used as supplements to the gas-fired forced hot air heaters.

D. <u>Operations</u>

i). Nature of Operations

Operations at this facility consist of the manufacture of skylights. Large plastic sheets are thermal formed (heat bending and molding) and assembled with metal and wood frames into skylights.

The metal and wooden frames are processed by Ventarama Skylight Corporation, from bulk metal and wood material.

ii). Toxic or Hazardous Chemicals

Toxic or hazardous substances include every substance, material or waste found listed in either Federal regulation 40 CFR Part 261, or 40 CFR Part 302, or New York State Environmental Conservation Law 6 NYCRR Part 371.

Following is a list of the toxic and hazardous materials present at the site at the time of the inspection. Bulk storage tanks of petroleum and chemical products are described in Section E; toxic or hazardous wastes produced by this operation, if any, are described in Section F.

Chemical/Material	Quantity Present
Waste oil	250 gallon capacity
Liquified Petroleum Gas	10 cylinders
Motor oil (diesel)	55 gallon drum
Hydro seal carburetor cleaner	20 gallons
WD40	20 gallons
L-424 grease	15 gallons
Airtool lubricant	1 gallon
Stratos 27-lubricating oil	10 gallons
Soluble cutting oil	10 gallons
Varnolene	5 gallons
Lacquer thinner	10 gallons
Pre-priming stabilizer	1 gallon
Safety-Kleen degreaser	20 gallons

iii). Interior and Exterior Housekeeping

The building was checked for signs of the improper handling of toxic and hazardous substances, and for the condition of chemical storage areas.

The interior housekeeping was observed to be neat and orderly.

Outside the building, the liquefied petroleum gas canisters were properly stored and locked in a steel frame cage. Other than some wooden pallets and cinder blocks, there was no debris or dumping observed on the property.

iv). Permits

Article XI registration (Toxic or Hazardous Materials Storage Facility Permit) is required for the bulk storage of over 27.5 gallons of waste oil. No permits for this were found to exist for this operation.

E. Petroleum and Chemical Storage Tanks

No evidence of the existence of underground storage tanks (i.e., fill ports and vents) was noted during the site inspection.

On this property, there is a single aboveground tank used for the storage of waste oil. It is a 250-gallon steel tank, approximately three years old, located in the rear storage area of the building. Information pertaining to size, age, construction, and storage content was obtained from Mr. Bechtold.

The tank fillport and vent areas were examined for signs of staining, which may indicate past spills from overfilling . No significant staining was observed.

F. Waste Products and Evidence of Improper Waste Disposal

Waste materials produced by this operation include waste oil, and spent degreasing solvents. The waste oil is periodically removed by AKBA Waste Oil Service, a licensed hazardous waste transporter (RCRA ID NYD055897789). Receipts from 1989 to 1990 were examined to verify this information.

According to Mr. Bechtold, from 1982 to 1985, waste oil from Ventarama was dropped off at Eastern Wheel Alignment in Brentwood, which used this material as fuel for their waste oil heater. After Eastern Wheel Alignment went out of business in 1985, Ventarama's waste oil was stored in 55-gallon drums. These drums (number unknown) were pumped out once in 1986. No documentation was available to verify this information. Around 1986-87, the current 250-gallon steel waste oil tank was purchased.

The degreasing solvent is disposed via a licensed waste handler, Safety Kleen, approximately every two months. Waste manifests for the period of 1989 to the present were examined to verify this information.

A Toxic or Hazardous Materials Storage Facility Permit is required (Nassau Suffolk County Department of Health, Article XI XII) because of the storage of more than 27.5 gallons of waste oil and waste thinner.

No such permit was made available during the course of this investigation.

The Ventarama Skylight Corporation business on the property is listed by the USEPA as a hazardous waste generator (Facility ID NYD002036515). According to Mr. Bechtold, Ventarama no longer generates trichloroethylene waste, and uses Safety Kleen to provide and transport the degreasing solvents used in their operations (see Section K.i.c.).

The property was also examined for evidence of improper on-site waste disposal such as abandoned drums, barrels, asbestos debris, waste piles, discolored soils, unusual or noxious odors, areas of sick or dead vegetation, discolored or polluted surface water, ground water monitoring wells, etc.

No evidence was found of the improper disposal of toxic or hazardous waste.

G. Asbestos-Containing and Other Hazardous Building Materials

i) Asbestos

The structure was examined for the possible presence of asbestos-containing material (ACM). This section describes approximate amounts of suspected ACM noted at the site, and is not to be used as a complete asbestos inspection, which is required prior to renovation, construction or demolition activities.

Friable types of asbestos, i.e., ACM that can be crushed, crumbled or pulverized using hand pressure, are hazardous when in a deteriorating condition. Friable materials may be tested by EEA if there is a question concerning ACM content.

Non-friable types of ACM, such as vinyl asbestos tiles (VATs), roof shingles and transite, are materials where asbestos fibers are contained in a cement or glue-like matrix. These are not considered hazardous under normal conditions of use, unless severely damaged or in a badly deteriorated state, or unless the material is cut, drilled, sanded or otherwise broken up during construction or renovation. Suspected non-friable ACM materials are not tested since these are not considered as great a potential hazard as friable materials.

The following table lists the location, type, condition, and approximate amount of suspected ACM. The amounts listed do not include ACM which may be hidden in walls or ceilings. The investigator has made an effort to examine hidden, but accessible areas, such as above suspended ceilings, etc.

The condition of this suspected ACM is rated as good, fair, or poor. ACM is usually covered with paper, cardboard, canvas, or metal. If this cover is damaged (for instance, by scrape marks from furniture), punctured, or is falling off its substrate, or if the insulation is damaged by water, then it is rated as "poor". If the damage is minor, the rating is "fair". If there is no damage; that is, if the covering on the ACM itself, and the substrate are sound, then the rating is "good".

Location	Type	Condition	Amount
Cafeteria	1' x 1' VATs	good	988 sf
Hallway next to cafeteria	1' x 1' VATs	good	330 sf
Above ceiling from sprinkler room through wall to bathroom	aircell	good/fair	55 lf

In summary, the following suspected ACM materials were noted in the buildings on the subject property: 55 linear feet of pipe lagging, and 1,318 square feet of VATs.

ii). Ureaformaldehyde Foam Insulation

No ureaformaldehyde foam insulation was observed.

iii). PCB-Containing Transformers

Nine transformers were observed on-site. Six transformers are located on two telephone poles outside, in the side parking area, to the south of the property. The remaining three transformers are located inside the building. One is located in the woodcutting room, one is located in the air compressor room, and one is located in the main shop room with the ovens. The two transformers located in the woodcutting room and the air compressor room were installed with the building additions in 1983. Since the manufacture and distribution of PCB's was banned in 1979, it is not likely that these two transformers would contain PCBs.

No indications that the transformers have leaked (i.e., visible oil spillage or stains) were observed around their bases.

According to Mr. Steve Dalton of the Long Island Lighting Company (LILCO), all transformers contain mineral oil as a coolant. The oil is considered contaminated if PCB concentrations are over 50 ppm. Historically, 85 percent of the transformers have PCB concentrations of less than 50 parts per million (ppm), 14 percent have between 50-500 ppm and 1 percent have over 500 ppm. LILCO is not required to test the transformer unless a leak is reported. Officially, the U.S. Environmental Protection Agency (USEPA) requires the transformer to be listed as PCB contaminated, until tested. In the event a leak is observed, LILCO will respond within two hours and will assume responsibility for a cleanup. If the property owner wishes to know the PCB level, LILCO will perform the test for $300 to $500.

H. Radon

Radon, a naturally occurring radioactive gas, is the product of the radioactive decay of uranium. It is found most frequently in high concentrations in rock formations containing uranium, granite, shale, phosphate, and pitchblende. Radon may also be found in soils contaminated with industrial waste from uranium and phosphate mining. Radon as a gas can move through the soil and water, and into the atmosphere, and is a potential health concern if confined in sufficiently high concentrations in indoor environments. The U.S. Environmental Protection Agency (USEPA) has set an "action level" of 4.0 picocuries per liter for continuous long term exposure to radon gas. If radon gas is measured above this level, USEPA suggests follow-up testing and remediation measures.

According to data compiled by the Bureau of Radiation Protection, New York State Department of Health, Nassau County has one of the lowest average levels of basement radon measurements in New York State. The latest April 1990 statistics indicate an average of 1.4 picocuries/liter for Nassau County, compared to a statewide average of 5.5.

I. Neighborhood Land Use

Present nearby land uses (within a 1/4-mile radius of the subject property) were visually surveyed at the time of the site inspection.

Properties identified within one mile of the subject property by regulatory agencies as being potentially contaminated sites are identified in Section K.

The following adjacent land uses were observed at the time of the site inspection:

Area	Business or Use
North	Nassau County Department of Public Works at 170 Cantiague Rock Road
South	Harbor Distributors at 100 Cantiague Rock Road
East	Cantiague Park
West (across Cantiague Rock Road)	Cleared land, possibly under construction

Of these adjacent uses, the Nassau County Department of Public Works and Harbor Distributors are types of operations known to produce, store, or use toxic or hazardous materials, including: gasoline, diesel fuel, waste oil, various automotive fluids and oils.

The Town of Oyster Bay zoning map (No. 11, revised 1976) indicates that land use in a 1/4-mile radius of the subject property is zoned for a mix of residential and light industrial.

A visual survey of the surrounding land within a 1/4-mile radius of the subject property was taken. The following industrial and auto-related operations were noted in this area:

Cantiaque Rock Road

15	Elkcom
55	Altana
70	Air Techniques
95	Vogue Lighting
100	Harbor Distributors
111	DC
170	Nassau County Department of Public Works
177	Vacant industrial building

West John Street

500	J.D. Brauner Butcher Block
520	Stokvis Multiton
550	A. Fishman Co. Housewares
600	General Instruments

J. Sensitive Receptors

Sensitive receptors are identified where known, because of the potential for extra regulatory surveillance at nearby commercial facilities. In the event of an incident involving the spill of a toxic or hazardous material at the subject site, more costly remedial actions may be required when sensitive receptors are present.

No surface waters or wetlands were observed on or adjacent to the subject property.

The subject property lies in Zone C, areas of minimal flooding, on the Flood Insurance Rate Map # 3604830045C (U.S. Department of Housing and Urban Development, March 16, 1983). The subject property is not in a flood plain.

K. Regulatory Records

i). U.S. Environmental Protection Agency

a). Superfund Sites

A check was made of the most recent U.S. Environmental Protection Agency's (USEPA) National Priorities List of Superfund hazardous waste sites (July 1989 listing) which fall under CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act of 1980) and SARA (Superfund Amendments and Reauthorization Act of 1986).

The subject property is not on the list. The following site is listed within one mile of the subject property:

Site Name	Location	Distance from Site
Anchor Lith Kem Ko. (Anchor Chemicals)	500 West John St.	approximately .25 mile SE

This site is also listed as Inactive Hazardous Waste Disposal sites by the New York State Department of Environmental Conservation, and is described in Section K.ii.b. of this report.

Groundwater flow in the area is generally to the south, therefore it is unlikely that this Superfund site has contributed any significant contamination to the subject property.

b). CERCLIS Sites

A check was made of the U.S. Environmental Protection Agency's CERCLA Information System (CERCLIS), USEPA's comprehensive data base and management system that inventories and tracks sites addressed or needing to be addressed by the Superfund program. Sites that USEPA decides do not warrant further evaluation are given a "No Further Action" (NFA) designation in CERCLIS, which means that no further action under CERCLA is presently anticipated for that site. An NFA designation does not necessarily indicate that there is no hazard associated with the site, only that, based on available information, USEPA does not plan further investigation at this time.

The subject property is not on the list. The following nine CERCLIS sites are listed within one mile of the subject property:

Site Name	Address	Code	Event Type	Approximate Distance
AGO Associates	449 W. John St.	NYD986888899	DS1, PA1	.5 mile SE
Air Techniques	70 Cantiague Rock Rd.	NYD043835081	DS1, PA1	200 ft south
Alsy Manufacturing	270 Duffy Ave.	NYD981184237	DS1, PA1, SI1	.6 mile SE
Anchor Lith Kem Ko (Anchor Chemicals)	500 W. John St.	NYD001488226	DS1, PA1, NP1, NF1 SI1, CR1, CO1	.25 mile SE
Brinkman Instruments	Cantiague Rock Rd. (Westbury)	NYD152088142	NFA, DS1, PA1	.5 mile north
Depew Manufacturing	359 Duffy Ave.	NYD002046597	DS1, PA1	.5 mile south
General Instrument Corp.	600 W. John St.	NYD002045466	DS1, PA1	.2 mile south
John Hassall	Cantiague Rock Rd. (Westbury)	NYD002045417	DS1, PA1, SI1	over .5 mile north
Mattiace Petrochemicals (MEK Spill)	530 W. John St.	NYD980763742	DS1, PA1	.25 mile south

The following is a description of the USEPA CERCLIS investigation status abbreviations for the aforementioned sites:

Discovery (DS)	Process by which a potential hazardous waste site is brought to the attention of the EPA
Preliminary Assessment (PA)	Process of collecting and documenting existing information about the source and nature of the site assessment
Site Inspection (SI)	Process of collecting site data and samples to characterize the severity of the hazard for the hazard ranking score and/or enforcement report
Proposal to NPL (NP)	Process of proposing that a hazardous waste site be placed on the National Priorities List based on the site's hazard ranking score
Final Listing on NPL (NF)	The conversion of a proposed site to the final listing on the National Priorities List
Combined RI/FS (CO)	Process of data collection and analysis of the site problem, identification of preliminary remedial alternatives, and recommendations of a cost effective remedy
Removal Action (RV)	Remedial action that requires expedition attention to reduce imminent and substantial dangers to human health, welfare, on the environment due to the release of a hazardous substance
Remedial Community Relations (CR)	Community relations activities, i.e., plan, implementation and responsiveness summary that must be completed at a site to address community concerns

Planned Removal (PR)	Response action taken that may allow several days or weeks for planning but still requires expeditious attention to reduce imminent and substantial dangers to human health, welfare, or the environment

All but two of the sites are located to the south of the subject property. Due to the direction of groundwater flow in this area (south), these sites are unlikely to impact the subject property. The two sites (Brinkman Instruments and John Hassall) located to the north are over .5 miles from the subject property. Therefore, due to the distance it is unlikely that they have significantly contaminated the subject property.

c). Hazardous Waste Handlers

Hazardous Waste Handlers (which include waste generators, transporters, and treatment/storage/disposal operators) are regulated by the federal government under the Resource Conservation and Recovery Act (RCRA). The USEPA List of Hazardous Waste Handlers, dated April, 1990, was checked for the subject business and businesses adjacent to the subject property. An inventory of hazardous waste handlers is useful to assess the kinds of hazardous materials in the vicinity of the site, as well as on the subject property. With the exception of those at the subject site, the presence of hazardous waste generators or transporters in the neighborhood does not usually imply risk of contamination to the subject property.

The following are listed as hazardous waste handlers:

Ventarama Skylight Corp., the subject business is listed as a generator (facility ID NYD002036515); hazardous waste generated is trichloroethylene (see Section III.F.).

Nassau County Department of Recreation and Cantiague Park, at West John Street, (adjacent business) is listed as a generator (facility ID NYD982794281).

Nassau County Stop Facility at 170 Cantiague Rock Road, (adjacent business) is listed as a generator (facility ID NYD982791519).

D.P.W. Road Maintenance Garage at 170 Cantiague Rock Road, (adjacent business) is listed as a generator (facility ID NYD982541252).

The following businesses within 500 feet of the subject property are also listed as hazardous waste handlers (generators "GEN", transporters "TRNS", or treatment, storage, disposal operators "TSD"). Hazardous waste generators are ranked according to quantity of hazardous materials produced (1=1000 kg or more per month; 2=100 kg or more per month; 3=less than 100 kg per month - "conditionally exempt").

Business Name	Address	Activity Type	Facility ID
Stokvis Multiton	520 W. John St.	GEN-1	NYD002045037
Hitemco Div. Barson Composite Corp.	70 Cantiague Rock Rd.	GEN-1	NYD068060011
Air Techniques	70 Cantiague Rock Rd.	GEN-1	NYD043835081
Nathan Lagin	95 Cantiague Rock Rd.	GEN-1	NYD002042123

ii). N.Y.S. Department of Environmental Conservation

a). Freedom of Information Letter

A Freedom of Information Letter (FOIL) was sent to the New York State Department of Environmental Conservation (NYSDEC), Region 1, on December 4, 1990 for information pertaining to this property. No response has been received to date. Responses typically take at least eight weeks.

Unless the subject property is classified as a hazardous waste handler (which would be specified in Section K.i.c. of this report), NYSDEC files will consist principally of hazardous materials spill incidents which were reported on or were suspected as having originated from the subject property. The Spill Log Database is a listing of all such incidents. Those reported on or near the subject property would be discussed as part of Section K.ii.c. below.

b). Inactive Hazardous Waste Disposal Sites

A check was made of the New York State Department of Environmental Conservation's (NYSDEC) Inactive Hazardous Waste Disposal Sites (April 1990 annual report, and July and September 1990 quarterly update).

The subject property is not on this list.

The following sites are listed within one mile of the subject property:

Site Name	Code	Address	Approximate Distance
Air Techniques	130040	70 Cantiague Rock Rd.	200 ft. south
General Instruments	130020	600 W. John St.	.2 mile south

Mattiace Petrochemical (MEK Spill)	130024	W. John St.	.25 mile south
Anchor Lith Kem Ko (Anchor Chem)	130021	500 W. John St.	.25 mile southeast
Depew Manufacturing	130038	359 Duffy Ave.	.5 mile south
AGO Associates	130029	South of W. John St.	.5 mile southeast
Magnusonics Devices	130031	290 Duffy Ave.	.6 mile southeast
Alsy Manufacturing	130027	270 Duffy Ave.	.6 mile south
New Cassel Industrial Area	130042	N. of Old Country Rd., S. of Railroad Tracks	.5 mile southwest

From 1964 to present

These sites have contributed to general groundwater contamination in the area (see discussion downgradient in Section K.iii.). However, since all the sites are of the subject property it is unlikely that the subject property's soil and groundwater has been contaminated from these sources.

c). Spill Logs

The NYSDEC spill logs for Region 1 were reviewed for the period of April 1, 1985 to October 30, 1990. No spills were listed on the subject property. There were two reported spill incidents listed within an approximate 500-foot radius of the subject property:

Spill #	Date	Location	Material	Cause	Status
8605893	12/16/86	Cantiague Rock Rd. Nassau County Dept. Public Works	diesel	unknown	active
8805837	10/10/88	75 Cantiague Rock Rd.	diesel	deliberate	active

A Freedom of Information Letter has been sent to the NYSDEC for information concerning these two active spills. No response has been received to date.

Because of the direction of groundwater flow (south) the spill at the Nassau County Department of Public Works may pose a contamination threat to the subject property, which is directly south of the spill location. Information concerning this spill is discussed in Section K. iv. and K.v.

d). Significant SPDES Facilities

Facilities with SPDES (State Pollution Discharge Elimination System) permits must submit routine monitoring reports to the government and are subject to regulatory review and compliance with discharge limits established by the NYSDEC and USEPA. SPDES permitees discharge to local water bodies and may affect the quality of nearby waters.

A check was made of the NYSDEC list (March 1990) of significant SPDES facilities.

The following SPDES facilities are listed within approximately one mile of the subject property:

Name	Address	Facility ID
Slantco Mfg Inc.	1500 Shames Drive	NY0105546
Quaker State Oil Refining Corp.	1 Keats Place	NY0199273

iii). Nassau County Department of Health

A Freedom of Information Letter (FOIL) was sent on December 4, 1990 to the Nassau County Department of Health for information on waste disposal practices and underground tanks at the site. A response was received on December 19, 1990; no files exist for Ventarama Skylight Corporation.

There is a file for Eaton-Yale, the company which previously occupied the subject property. The files were reviewed on January 9, 1991. According to the Nassau County Department of Health Records, a 1977 site survey stated that Eaton-Yale produced waste oil from vehicle maintenance, and utilized kerosene base solution to degrease truck parts. The files state that wastes were picked up for recycling.

In addition, enamel was used in the business' operations, and the use of a paint spray booth produced possible emissions to the air.

In addition, FOILs were sent for other industrial operations in the immediate area, including Elkcom (15 Cantiague Rock Road), Harbor Distributors (100 Cantiague Rock Road), Air Techniques (70 Cantiague Rock Road), and the Nassau County Department of Public Works (170 Cantiague Rock Road).

The following files were reviewed on January 9, 1991:

- o Harbor Distributors
- o Nassau County Department of Public Works

There were no files made available for Elkom, and Air Techniques.

A review of the files on these properties indicates the following:

Nassau County Department of Public Works

- On approximately September 5, 1979 the Fire Marshal's Office notified the State Department of Transportation (NYSDOT) that a 3,000 gallon underground gasoline tank located at the Nassau County Department of Public Works (DPW) garage at Cantiague Park in Hicksville had failed a pressure test (DEC Spill #79-0770). DPW removed the storage tank and installed a new 10,000 gallon tank at the site. However, none of the involved agencies (i.e., NYSDOT, Fire Marshal Nassau County Department of Health) were present to inspect the removed storage tank for structural integrity and check the soil in the excavation to determine if product had been lost. Initial loss was estimated at 40,000 gallons of gasoline.

  Following the removal of this tank, until approximately October 1981, a period of approximately 1 and 1/2 years, the Nassau County Fire Marshal's Office tried unsuccessfully to have observation wells installed to the depth of groundwater table to determine the presence of gasoline product on the site. In November of 1981 NYSDOT directed DPW to install observation wells at the site under the terms of Article XII of the State Navigation Law.

- Site wells were installed around March of 1982 and approximately 7 inches of gasoline product was found to be present on the groundwater table in one of two wells installed. Additional site wells were requested in March of 1982 by NYSDOT. Additional wells were installed in April and May of 1982.

- As a result of monitoring of the observation wells at the site, the NYSDOT directed DPW to install a recovery well system in August 1982. In September of 1982 DPW wrote NYSDOT to investigate the possible use of State spill funds for installation of the recovery system. In October of 1982 DPW was informed that since the spiller was known, i.e., DPW, and the County had the resources to install the recovery system, spill funds could not be used for this installation. On November 1, 1982 at the monthly coordination meeting attended by Nassau County Department of Health (NCDOH), NYSDOT, DPW and the Fire Marshal, DPW indicated that it was writing specifications for the recovery system.

- On February 28, 1983 NYSDOT directed DPW to begin daily withdrawal of product from site wells. DPW had not commenced this operation.

- At a November 10, 1983 meeting DPW indicated a reluctance to proceed with any recovery at this site since they believed that it was not economically justifiable. In June, 1984, the recovery well was installed and became operational.

- Due to delays in installing observation wells at the site, it took approximately 2 and 1/2 years to discover the presence of floating product on the groundwater table. The DPW garage is located in a prime groundwater recharge area of the County and upstream from several public supply wells. An estimate based on well data as of January 7, 1983 indicated the presence in the ground of approximately 49,000 gallons of gasoline.

  According to NCDOH, the delay by the DPW in installing the recovery system may have led to the dissolution of aromatic hydrocarbons, including benzene, into the groundwater, with possible adverse effect on groundwater quality and could possibly have affected public supply wells in the area. Since this spill occurred in September of 1979 and the recovery well was not installed until June of 1984, this delay may have allowed the movement of the product plume from the area.

- On January 13, 1987, the tank tester informed the NCDOH that one 3,000 and two 6,000 gallon #2 fuel oil tanks failed tightness tests. These tests were prompted by the recovery of approximately 200 gallons each week of fuel oil by the gasoline recovery system for eight weeks prior.

  On January 17, 1987, all three tanks were divorced from their piping and retested. Again, all three tanks failed.

- A letter (dated March 14, 1989) from the NYSDEC to the NCDPW reported that over 5,110 gallons of product had been recovered as of February 27, 1989, during the second phase of product recovery. A prior recovery operation possibly recovered an additional 5,000 gallons of product.

Harbor Distributors

A survey dated 10/4/77 noted that this business used #2 fuel for heating purposes, and that it utilized approximately 25 to 30 gallons per year of the degreaser (to clean truck parts) which was disposed of into cesspools.

A survey dated 8/4/81 states that Harbor Distributor's waste oil is removed by AKBA Waste Oil. At this time, no action was taken concerning the degreaser because the quantity was too little, the report concludes.

The file briefly mentions a spill on 6/19/86 (DEC Spill # 86-1932 or 86-5932), but contains no other information concerning this incident.

On 8/5/87 Harbor Distributors applied for tank registration of the following tanks:

Number	Location	Above/below Ground	Type	Capacity
1	indoor	aboveground	15W40 oil	200 gal
2	outdoor	aboveground	waste oil	100 gal
1	outdoor	belowground	diesel	10,000 gal
1	outdoor	belowground	unleaded	4,000 gal
1	outdoor	belowground	leaded	4,000 gal

An additional survey on 8/31/87 lists the following materials:

Gear Lube	120 lbs.
Grease	155 lbs.
Mineral Spirits	55 gallons
Auto Transmission Fluid	55 gallons

v). Fire Department Records

A Freedom of Information Letter was sent on December 4, 1990 to the Nassau County Fire Marshal's Office to determine if any file exists for the subject property. A response was received on December 10, 1990.

There are no records at this agency of permits or violations with respect to the storage of flammables.

In addition, FOILs were sent for other industrial operators in the immediate area, including Elkcom (15 Cantiague Rock Road), General Instruments (600 West John Street), Harbor Distributors (100 Cantiague Rock Road), Air Techniques (70 Cantiague Rock Road), and the Nassau County Department of Public Works (170 Cantiague Rock Road).

The following files were reviewed on January 7, 1991:

- Nassau County Department of Public Works
- General Instruments
- Elkcom/Equipco
- Harbor Distributors

A review of these files indicates the following:

o General Instruments

On 6/9/86, two 10,000-gallon heating oil tanks failed tightness tests. On 2/28/90, one 2,000-gallon tank passed a tightness test. No other information was on file. Because of the subject property's distance from this property (approximately .25 mile south), this tank leak would not appear to pose a significant threat of contamination to the subject property.

o Nassau County Department of Public Works

According to the Nassau County Fire Marshal records for the adjacent property at 170 Cantiague Rock Road (Nassau County Department of Public Works), on August 1979 a 3,000-gallon unleaded gasoline tank failed a tank tightness test (spill # 79-007). This tank was replaced by a 10,000-gallon fiberglass tank.

On April 25, 1980 the new 10,000-gallon fiberglass tank passed a tank tightness test. An existing 1,000-gallon diesel and 5,000-gallon gasoline tank failed their tightness tests on the same day. On 5/13/80 they passed a second tightness test.

On 7/20/81 the 1,000-gallon diesel tank was tightness tested again and passed.

Two site wells (#'s 1 & 2) were installed at the site of the August 1979 tank test failure (3,000-gallon gasoline tank). A letter dated March 12, 1982, from the Nassau County Department of Public Works (DPW) indicates 7 and 3/4-inches of floating product (amber gasoline) in the easterly well. No floating product was found in the westerly well. Plans were noted to install an additional three wells (#'s 3, 4, & 5) to define the extent of the gasoline floating on the groundwater.

A letter from the DPW, dated April 20, 1982, states that of the five wells that had been installed, three are indicated as clean (wells # 1, 3, & 4), but that an increase from 7 and 3/4-inches to 10 and 1/4-inches of product was noted in well #2, and 4 and 7/8-inches of product was observed in well #5 (located to the south of well #2).

The installation of an additional three wells (#'s 6, 7, & 8) to further define the extent of the gasoline floating on the groundwater was deemed necessary.

A letter dated August 18, 1982, to the Commissioner of the DPW states that of the last three wells installed, two of the three (#'s 6 & 7) show a large amount of product floating on the groundwater. It is again indicated that an additional four wells (#'s 9, 10, 11, & 12) would need to be added to determine the extent of gasoline floating on the groundwater.

On December 16, 1986 the NCFM records indicate the presence of fuel oil in the recovery well which had been installed to recover gasoline from the tank leak noted in previous section. However, according to the file, 2,000-gallons of diesel (fuel oil?) had been recovered in seven weeks from this recovery well.

According to the NCFM files, two fuel oil tanks (6,000 and 3,000 gallons) failed their tightness tests on January 13, 1987. On January 15, 1987 a third fuel oil tank (6,000 gallons) failed its tightness test. The 6,000-gallon diesel and 10,000-gallon gasoline tanks passed their tightness tests administered the same day.

On January 17, 1987 the three fuel oil tanks which had failed their tightness tests ((1) 3,000- and (2) 6,000-gallon tanks) were deemed "not usable".

On January 28, 1987 all fuel oil was pumped out of the three leaking fuel oil tanks. There is no indication that these tanks were replaced by new fuel oil tanks.

Records for the passing tightness tests of the 10,000-gallon unleaded tank (April 4, 1990) and the 6,000-gallon diesel tank (July 10, 1990) was noted.

- <u>Elkom/Equipco</u>

On 4/15/82, two 1,000-gallon gasoline tanks passed tightness tests and were abandoned in place.

On 7/19/88, two 4,000-gallon gasoline tanks (installed 4/1982) passed tightness tests.

- <u>Harbor Distributors</u>

In November 1981, Harbor installed one 10,000-gallon diesel and two 2,000-gallon gasoline tanks. All three tanks passed tightness tests on 8/17/89.

IV. SCOPE OF WORK

This Environmental Investigation involves research into the history of uses of the site, which includes checks with government agencies on permits and violations, and a visual inspection of the facilities and property to determine the possible presence of toxic and hazardous materials. An assessment is then made regarding the potential for site contamination (i.e., building, soils and ground water) from past or present use. If evidence of potential significant site contamination is found, then testing (Phase II) may be recommended.

Historical site use evaluation is important in the assessment of the likelihood of past releases of hazardous substances (which include petroleum products), including releases from off-site sources. Sources of historical information include:

- Local library documents (maps, atlases, directories, etc.).
- Interviews of current site operators, adjacent site operators, or other "old timers."
- Board of Health for ground water problems, hazardous waste spill records, leaching pool permits, underground tanks, and location and condition of private and public drinking water wells.
- Engineering Department for aerial photographs, topographic maps.
- Building Department for building history, compliance records, demolition and modification permits.
- Fire Department and County Department of Health for permits for fuel oil tanks, and for the bulk storage of other flammable materials, and records of environmental violations, storage issues, etc.
- Tax Assessors Office for tax maps, historical property owners and field cards.
- New York State Department of Environmental Conservation for hazardous waste spill records, and the location and status of inactive hazardous waste disposal sites.
- U.S. Environmental Protection Agency for location of Superfund sites, or other information (if site has been involved with certain compliance issues).

A site inspection is performed to ascertain present site usage and the potential for environmental contamination. The property, and any buildings on it, is investigated with the following objectives:

- o to identify sources of potential on-site contamination, such as underground storage tanks, dry wells, PCB transformers, asbestos containing materials, urea formaldehyde, interior floor drains, etc.
- o to examine the property for signs of potential contamination: discolored ground, unusual odors, stressed vegetation, stacked drums, oil slicks, etc.
- o to identify the quantity and type of toxic or hazardous substances used in the operation of on-site business (through Materials Safety Data Sheets, product invoices, and reports to the regulatory agencies).
- o to determine if the handling and disposal of toxic and hazardous materials are undertaken in accordance with local and state laws, and good practice. Waste removal manifests are checked.
- o to identify potential off-site sources of contamination. Adjacent business are noted, along with topography and surface water drainage patterns.
- o to identify on-site or adjacent off-site sensitive receptors, such as wetlands, surface waters, wells, etc.

Not all of the objectives described above are applied to every site; audits are tailored to the nature of the site. In addition, no judgment is made with respect to the facility's compliance with worker exposure standards established by the Occupational Safety and Health Administration (OSHA).

<u>Sampling Methodology</u>

At each on-site sampling location, soil samples were obtained by utilizing a steel, 24-inch, split spoon sampler, which was driven through the subsurface levels ahead of a hollow stem (6 inch) auger, which bores into the soil to the desired sampling depth. The split-spoon sampler was driven through the top two feet of soil to obtain the surface sample, which was composited and placed in the proper refrigerated containers.

The auger then bored down to a depth of two feet, a split-spoon sampler was then inserted in the hollow stem and driven to a depth of four feet to obtain the first intermediate sample. Next, the auger bore down to four feet and the split-spoon sampler driven to six feet, to obtain the second intermediate sample. This procedure was repeated until the deep sample was obtained from a two foot horizon above the groundwater table.

An organic vapor analysis (OVA) was performed on all soil samples using a Century Model 128 Organic Vapor Analyzer. The sample producing the highest OVA reading was sent to the laboratory for analysis.

The water samples were obtained by installing a 2-inch ID PVC casing in a 6-inch augured hole. The PVC screen was installed with the top two feet above the level of the groundwater. The total screen length was 10 feet. The well screen slot size was 0.10. A filter pack of sand (20 to 4 SSS) was placed in the annular space around the screens and extended above the screen.

The wells were developed on the same day drilled, and hand bailed until visually free of suspended materials or sediments. A dedicated teflon bailer was used for each well.

<u>Quality Assurance & Control</u>

To avoid contamination and cross-contamination of samples, all sampling equipment was cleaned before each sample was collected. The split-spoon and hollow-stem auger were first steam cleaned. The following procedures were followed:

Step 1: Steam clean equipment.

Step 2: Scrub with a bristle brush using a non-phosphate detergent (such as Alconox) in hot tap water.

Step 3: Rinse with hot tap water.

Step 4: Rinse twice with deionized water.

Step 5: Rinse with spectrographic-grade acetone.

Step 6: Air dry.

Step 7: Rinse twice with deionized water.

Step 8: Air dry.

Step 9: Keep in clean unused aluminum foil.

This decontamination procedure was used for all borings.

A chain of custody record is kept at all times with the samples. This record documents sample collection date/time and collector. The sample possession record begins at sample collection and ends at delivery to the laboratory.

V. QUALIFICATIONS

EEA, Inc. (a.k.a. Energy & Environmental Analysts, Inc.) is an environmental consulting firm that has performed environmental pollution and development feasibility and risk studies for real estate sites since 1979. These site evaluation studies have been performed for major financial lenders, public corporations, private developers and governmental agencies. Over 800 parcels were evaluated in the metropolitan New York-New Jersey area during the past 3 years, ranging from Phase I Environmental Audits (documentary review) to comprehensive soil, water, and asbestos testing programs. EEA also prepares bid specifications for remediation programs and supervises site cleanup.

EEA's principals and senior managers for the hazardous waste investigations each have over 15 years experience in environmental consulting and have established credentials in the field. Background credentials of the staff performing this study can be provided, if desired.

VI. DISCLAIMER

This report is for use by Gilbert Displays, Inc. as a supplement to the property appraisal, and is only to be used as a guide in determining the possible presence of toxic materials on the subject property at the time of the inspection. This Phase I environmental assessment was undertaken in accordance with generally accepted assessment protocols. This report is based principally on the review of available historic records (which may be incomplete) relating to past occupants and usage of the subject property, as well as activities at nearby sites, and upon a visual inspection of the property at the time of the inspection, and makes no determinations with respect to portions of the premises which were not inspected.

This Environmental Investigation constitutes only the professional opinion of EEA, Inc. based on established procedures and protocols. This report is not, and should not be construed as, a guaranty, warranty, or certification of the presence or absence of toxic substances, which can be made only with testing, and contains no formal plans or recommendations to rectify or remediate the presence of any toxic substances, which may be subject to regulatory approval.

Any and all liability on the part of EEA, Inc. shall be limited solely to the cost of this survey report. EEA, Inc. shall have no liability for any other damages, whether consequential, compensatory, punitive, or special, arising out of, incidental to, or as a result of, this survey and report. EEA, Inc. assumes no liability for the use of this survey or report by any person or entity other than the institution for whom it has been prepared.

VERIZON

Voluntary Cleanup Agreement

Former Sylvania Electric
Products, Inc. Facility

Hicksville, NY

Potential Transport of
Uranium From Subsurface Soils
in Cell 6 to the Point of Interest Report

By URS

(LKR)

verizon

GTE Operations Support Incorporated
One Verizon Way (VC34W453)
Basking Ridge, NJ 07920
(908) 559-3687

November 17, 2006

Mr. Robert Stewart
Division of Environmental Remediation
New York State Department of Environmental Conservation
SUNY Campus Loop Bldg. 40
Stony Brook, New York 11790-2356

Re: **Voluntary Cleanup Agreement**
For: Former Sylvania Electric Products Incorporated Facility
By: GTE Operations Support Incorporated
Site #: V-00089-1 W1-0903-01-12

Transmittal of Potential Transport of Uranium From Subsurface Soils in Cell 6 to the Point of Interest

Dear Mr. Stewart:

Enclosed is the *Potential Transport of Uranium From Subsurface Soils in Cell 6 to the Point of Interest* Report.

If you have any questions or require additional information, please do not hesitate to contact me. I can be reached at (908) 559-3687.

Sincerely,

Jean M. Agostinelli
Vice President and Controller

Enclosure:

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POTENTIAL TRANSPORT OF URANIUM FROM SUBSURFACE SOILS IN CELL 6 TO THE POINT OF INTEREST

FORMER SYLVANIA ELECTRIC PRODUCTS INCORPORATED FACILITY

HICKSVILLE, NEW YORK

SITE NUMBER V 00089-1

Prepared by
URS Corporation
and
Envirocon, Inc.

For:

GTE Operations Support Incorporated
One Verizon Way
Basking Ridge, NJ 07920

November 2006

This Potential Transport of Uranium from Subsurface Soils in Cell 6 to the Point of Interest Report has been reviewed by URS Corporation – New York, and I am in agreement with the conclusions.

URS Corporation – New York

Robert D. Brathovde, P.E.
Engineer of Record

This Potential Transport of Uranium from Subsurface Soils in Cell 6 to the Point of Interest Report has been reviewed by Professional Radiation Consulting, Inc. (PRCI), and I am in agreement with the conclusions.

Professional Radiation Consulting, Inc.

Shane Brightwell, CHP
President

This Potential Transport of Uranium from Subsurface Soils in Cell 6 to the Point of Interest Report has been reviewed by Envirocon, Inc. and I am in agreement with the conclusions.

Envirocon, Inc.

Richard Hafner
Radiation Safety Officer

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APPENDICES

The Boring Logs, Appendix F, are presented on the enclosed CD which also includes a complete electronic copy of the remainder of this report.

EXECUTIVE SUMMARY

Under the New York State Department of Environmental Conservation (NYSDEC) Voluntary Cleanup Program, GTE Operations Support Incorporated (GTEOSI) conducted soil investigations and completed Phase 1 of a soil remediation program at the Former Sylvania Electric Products Incorporated (Sylvania) Facility, Hicksville, New York Site (the Site). During these remediation activities, soils above the cleanup level of 100 picoCuries per gram (pCi/g) of total uranium were excavated and replaced with clean fill. In certain portions (cells) of the Site, residual soils remain in limited areas at depths below the engineered excavation limits, but above the water table, with low levels of uranium (i.e., total uranium). Although these levels are generally below the soil cleanup levels, GTEOSI asked URS and Envirocon to conduct a preliminary study to evaluate whether these residual levels would, if mobilized by percolating rainwater, exceed the U.S. Environmental Protection Agency (USEPA) maximum contaminant level (MCL) for total uranium in drinking water after eventual transport to a Site boundary. This Report discusses the methodology and results of this study related to the levels of uranium in residual soils in Cell 6.

After a review of several numerical and analytical models (Appendix C), the MULTIMED model (USEPA, 1996a) was selected to simulate the ground water transport of uranium. This model has the capability to account for dispersion in three dimensions, retardation, source depletion, and dilution due to recharge by infiltration along the path of ground water transport. It assumes that a dominant direction of ground water transport can be identified along with the dimensions of the contaminated area and the concentration of uranium in infiltrating rainwater desorbed from contaminated soils and entering the water table. A separate desorption model, which is based on linear equilibrium conditions between concentrations in the liquid and solid phases, was used to estimate the concentration entering the water table.

Detailed soil analytical data for the Site were collected and are available for the uranium isotope, U-238. Therefore, uranium-238 (U-238) is used as an indicator for the transport of uranium. The U-238 concentration in soils used as input for the desorption model was selected from the set of subcells with the highest weighted average concentration in Cell 6, specifically the series U subcells with an estimated weighted average concentration of 8.87 pCi/g.(see Figure 1). This estimated weighted average concentration is higher than the estimated weighted average U-238 concentration in the adjacent subcells (subcell series Q and R). Series U subcells in Cell 1 are located immediately upgradient of series U subcells in Cell 6. Therefore, potential transport of U-238 from series U subcells in Cell 1 was also considered in conjunction with the transport from U series subcells in Cell 6. The weighted average concentration in series U subcells in Cell 1 was used to estimate the U-238 concentration entering the water table from these subcells in Cell 1. The estimated weighted average concentrations of U-238 in the series U subcells in Cell 1 is 13.79 pCi/g.

Simulations for U-238 transport using the MULTIMED model were conducted using reasonably conservative assumptions and model input parameters supported by available Site-specific data and commonly accepted literature values. Site-specific values were used for partition coefficient (K_d), hydraulic conductivity (K), porosity (φ), and bulk density (ρ_b). The partition coefficient values were obtained from laboratory analysis of several soil samples collected at varying depths from several locations around the Site. The values of the other three parameters (K, φ, and ρ_b)

were obtained from laboratory analysis of several samples taken from a bore hole drilled in the vicinity of Cell 1, which is located on the northeast corner of Cell 6. Other parameters derived from Site-specific information include source dimensions, U-238 concentration in residual soils, direction of dominant ground water flow, and hydraulic gradient. The parameters that are based on literature values include recharge, infiltration, dispersivities, and effective aquifer thickness.

A baseline scenario was simulated using a vertical plane rectangular patch source configuration and assuming that the area occupied by series U subcells in Cell 6 and Cell 1 remains unpaved or undeveloped. This baseline scenario indicated a maximum U-238 concentration of approximately 11.0 picoCuries per liter (pCi/L) of U-238 in ground water at the southern Site boundary. This predicted concentration of 11.0 pCi/L is close to the lower limit of the range of MCL for U-238 (i.e., 10 to 22.5 pCi/L).

Because it is likely that the area occupied by Series U subcells in Cell 6 and Cell 1 may be developed in future and paved or covered with buildings, an additional simulation was performed to examine the effect of this condition. In this simulation, infiltration through the residual soils containing uranium is significantly reduced. The result of this simulation indicates much smaller concentrations of U-238 at the southern Site boundary (see Appendix E).

Because there is considerable variation in measured U-238 concentrations in the data collected, and the concentrations at different locations and depths include different and indeterminate degrees of dilution due to mixing with ambient ground water flow, reliable data for the calibration or "benchmarking" of a uranium transport model are not available. However, predicted U-238 concentration for the aforementioned baseline scenario is similar to the observed concentrations in downgradient monitoring wells and profiles. This suggests that the adopted model parameters are reasonable.

The results of this study indicate that future concentrations of U-238 or total uranium in ground water at the southern Site boundary associated with the uranium concentrations in residual soils in Cell 6 are within the range of MCLs for drinking water.

1.0 INTRODUCTION

1.1 BACKGROUND

This report documents the method and results of ground water transport modeling at the Site. While the former Site is currently subdivided into three lots known as 140, 100 and 70 Cantiague Rock Road, it was a single site when operated by Sylvania in the 1950s and 1960s. Beginning in 1952, Sylvania used the Site to fulfill contracts with the U.S. Atomic Energy Commission (AEC) and the AEC's prime contractors for the production of nuclear fuel elements and components comprised of thorium, natural and enriched uranium, and aluminum alloys. Residual soil contamination created by operations conducted in support of these contracts includes uranium (U-238, U-235, and U-234).

Previous concurrence between NYSDEC and GTEOSI under Voluntary Cleanup Agreement, Site V-00089-1, Index W1-0903-01-12, established a cleanup level of 100 pCi/g of total uranium for soils at the Site. In this report, the words total uranium and uranium are used interchangeably and refer to all uranium isotopes. The above cleanup level was selected because it provides appropriate safety from the radiological and toxicological hazards of uranium for future users of the property if the remediated Site were released without restriction. To comply with this Agreement, most of the soils within the Site area with total uranium concentrations above the cleanup level were excavated and replaced with clean fill. However, residual soils remain with small amounts of uranium (i.e., generally below cleanup levels) in limited areas at depths below the engineered excavation limits in Cell 6 and Cell 1.

Rather than performing a chemical analysis for total uranium during remediation, the State authorized analysis for specific isotopes at the Site. This approved methodology was adopted because of the ease and sensitivity of the radiometric method and because it provided the ability to analyze for enriched uranium. Since information on uranium contamination in residual soils is available in terms of U-238 concentrations, the U-238 isotope is used as an indicator of the transport of uranium in this study (see Appendix A).

At the Site, isotopic uranium activities as a percent of the total uranium observed in Cell 6 (average for 70 samples) were U-238 $\approx$ 49%; U-234 $\approx$ 49%; and U-235 (and other isotopes) $\approx$ 2%, while in Cell 1 (average for 44 samples) the percentages were U-238 $\approx$ 49%; U-234 $\approx$ 48%; and U-235 (and other isotopes) $\approx$ 3%. Therefore, the concentration of total uranium in soils in Cell 1 and Cell 6 is considered to be two times the measured concentration for U-238. For the transport analysis (for U-238) included in this study, the results for U-238 were adjusted by a factor of two to reflect the approximate concentration of total uranium.

For Site management and excavation control, the area of interest was divided into cells, and soil removal and replacement were conducted on a cell-by-cell basis. To further facilitate remediation and monitoring of contamination in residual soils, each cell was divided into several series of smaller subcells. Cell 6 is divided into three series of subcells, Q, R and U. The subcells within Cell 6 include Q06 to Q11 in series Q, R06 to R11 in series R, and U08 to U11 in series U. Residual soils in series U subcells in Cell 6 were found to contain relatively higher concentrations of U-238 compared to subcells in series Q and R.

During the Phase I remediation, the other cell identified with residual soils containing small amounts of uranium that had required additional study was Cell 1 as reported in *Potential Transport of Uranium from Subsurface Soils in Cell 1 to the Point of Interest* (October 2006). Subcells U04, U05, U06 and U07 within Cell 1 are directly upgradient of the U-series subcells of Cell 6. Therefore, these four subcells in series U of Cell 1 are also relevant to potential transport of uranium-238 (U-238) from Cell 6 (Figure 1) and were included in the Cell 6 analysis.

Identified concentrations of U-238 in residual soils, below the engineered excavation limits to a depth of approximately 64 feet (ft) below ground surface (bgs) vary from 13.66 pCi/g in subcell U07 to 20.26 pCi/g in subcell U06 of Cell 6 and 28.79 pCi/g in subcell U05 of Cell 1. The investigative soil borings were stopped approximately five to ten ft above the water table to prevent the introduction of potentially impacted soils or water from the unsaturated soil zone into the ground water environment.

1.2 OBJECTIVE

The objective of this preliminary modeling study is to understand and quantify the risk, if any, due to ground water contamination associated with uranium in residual soils by way of potential migration to ground water and eventual transport to the intersection with a Site boundary (Figures 1 and 2). Potential risk of ground water contamination is evaluated by comparison of predicted ground water contamination at the point of interest with the maximum permissible contaminant level (MCL) of uranium for drinking water established by the USEPA.

1.3 GROUND WATER STANDARDS FOR URANIUM

The USEPA regulates uranium in drinking water under the Safe Drinking Water Act, with MCLs published in Title 40 Code of Federal Regulations (CFR), Part 141. Uranium is a naturally occurring radioactive element and a heavy metal, and the MCL reflects consideration of both the chemical and radiological toxicities. The USEPA MCL for total uranium was set at 30 microgram/liter (μg/L) with an effective date of December 8, 2003 (USEPA, 2000a and 2002). The NYSDEC has adopted this MCL for uranium as an appropriate goal for evaluating the impacts of the contaminant on ground water at cleanup sites in New York.

For comparison to the MCL, it is necessary to convert the radiometric or activity measurements (picoCuries or pCi) of specific isotopes to the mass units of the MCL (microgram or μg). In this analysis, the range of conversion factors, 0.67 to 1.5 pCi/μg, recommended by USEPA for total uranium was considered (USEPA, 2002a and 2002b). Applicable to a variable isotopic mix of natural uranium, this range resulted in an equivalent MCL range of 20 to 45 pCi/L for total uranium. Based on the proportions of uranium isotopes on an activity basis measured in the soils in Cell 1 (see Subsection 4.1.1), this range of MCL for total uranium (20 to 45 pCi/L) is expressed as 10 to 22.5 pCi/L for U-238 and 10 to 22.5 pCi/L for U-234 (MCL for U-235 being less than 0.5 pCi/L). Thus, the cleanup target of 30 μg/L of total uranium in drinking water is interpreted as a range of 10 to 22.5 pCi/L of U-238 in ground water in this analysis (see Appendix A).

Data collected from ground water close to the water table and at various depths below the water table at the Site indicated either non-detect or relatively low levels below the range of MCL of

U-238 in most monitoring wells and profiles. Exceptions are an unfiltered sample from monitoring well MW-2 collected on March 15, 2003, and field-filtered samples (analyzed in April-June 2005) from two profiles, P-103 and P-107, drilled and sampled in April and May, 2005 (see Section 3).

1.4 REPORT ORGANIZATION

This report is organized in seven sections as described below:

Section 1 (Introduction) describes the Site background, objective of the study, and relevant ground water standard for uranium and U-238.

Section 2 (Model Selection) describes relevant physical processes and the models selected to simulate those processes.

Section 3 (Field Data for Ground Water Depth and U-238 Concentrations) summarizes observed data for depth to ground water, U-238 concentrations, and their relevance to model development.

Section 4 (Estimation of Relevant Model Parameters) includes the process and sources for estimating different model parameters.

Section 5 (Baseline Simulation Scenario) includes description of the baseline scenario and model result for the baseline scenario.

Section 6 (Conclusion) summarizes the results of the study.

Section 7 (References) includes a list of references used in the study.

Relevant details of models evaluated for the study along with a list of relevant references, back-up material for the justification of specific items of information used in the analysis, additional model simulation assuming paved surface of subcells, and the logs of the boreholes from which soil samples were taken for laboratory analyses are included in the appendices.

2.0 MODEL SELECTION

The physical processes that govern the fate and transport of uranium at the Site and provide the basis for model selection are described in the following subsection.

2.1 PHYSICAL PROCESSES

The rainwater infiltrating through a column of soil with U-238 contamination would dissolve (desorb) a portion of the U-238 adsorbed to the soils and transport it through the unsaturated soil column (known as the vadose zone) down to the water table. At the Site, U-238 in residual soils has been detected at various depths below the engineered excavation limits encountered during the Phase I soil remediation program down to approximately five to ten ft above the water table. The concentrations of U-238 in these residual soils are known. Since soil in the area above the residual soils was removed and replaced with clean soil, detailed modeling of the processes related to transport into the vadose zone has little relevance.

In most field situations, the transport from the vadose zone to the water table would occur under partially saturated conditions. This transport is generally not a steady state process. But, for the sake of simplicity and conservatism, it is assumed in the model that sufficient soil moisture is available and the exchange of contamination from soils to water occurs under equilibrium conditions corresponding to the average concentration in subcells in Cell 6 and Cell 1. As such, the infiltrating water continuously receives a portion of the U-238 from the soils. Due to the exchange of U-238 from soil to ground water, the soil concentration would be reduced from year to year. Thus, the vadose soil zone is a continuous source with gradually diminishing concentrations of U-238 available for transport into the saturated zone. In this analysis, however, it is assumed that the source concentration remains constant and does not deplete with time.

The transport of U-238 in the saturated zone is controlled primarily by the amount of contaminant present in the soils at the source; the rate of release from the source; and hydrologic factors such as dispersion (Subsection 4.4), advection (i.e., ground water flow velocity), dilution, and adsorption/desorption (Subsection 4.1.1). A brief description of the relevance of such processes to the present study is included in the following paragraphs.

Chemical Speciation

Chemical speciation is not relevant to this study because transport of U-238 (an isotope of uranium) is used as an indicator of the concentrations of total uranium.

Diffusion

In ground water transport modeling, the contribution of diffusion is usually accounted for by adding the molecular diffusion coefficient for the contaminant of concern to the dispersion coefficients. However, the molecular diffusion coefficient for total uranium may be several orders of magnitude smaller than the dispersion coefficients (see Appendix B). Therefore, the contribution of diffusion is not considered significant and is not incorporated in this study. So far as the dispersion of contaminants is concerned, this is a conservative assumption.

Relevant Processes

In view of the above, relevant processes governing the fate and transport of U-238 from the soils to the ground water environment at the Site include the following (see Figures 1 and 2):

- Transfer of U-238 contamination from soils to water due to desorption with infiltrating rainwater;
- Dilution of U-238 concentrations reaching the water table with ambient ground water flow beneath the cell; and
- Transport of the dissolved concentrations in ground water beneath the cell to the point of interest through the saturated soil zone with dispersion, retardation, radioactive decay, dilution due to ground water recharge, and dilution with ambient ground water flow.

The criteria for model selection and brief descriptions of ground water transport models evaluated to simulate the above processes are described in Appendix C. The specific models adopted for the study are described in Subsection 2.2.

2.2 SELECTED MODELS

The selected models include the main ground water transport model and a suite of supplementary models to estimate some of the input parameters for the transport model.

The descriptions of ground water transport models included in Appendix C suggest that the effort required and accuracy of prediction provided by a sophisticated finite-difference or finite-element model or suite of models may not be commensurate or possible with available Site-specific information and the objective of this analysis. Instead, a less complex and reasonably conservative approach is appropriate.

The comparative evaluation of different modeling approaches included in Appendix C indicates that the MULTIMED model (USEPA, 1996a) captures the essential processes associated with the transport of U-238 or total uranium and is expected to predict reasonably conservative concentrations at a specified downgradient location. Therefore, this model is selected for a preliminary and conservative analysis of the fate and transport of U-238.

The MULTIMED model (like most other models) requires supplementary models to estimate the source concentration for ground water transport and retardation factor. Brief descriptions of the MULTIMED model and supplementary models used to estimate the concentration at the ground water source and retardation factor are included in Subsection 2.3.

2.3 DESCRIPTION OF SELECTED MODELS

Brief descriptions of the models selected for this analysis are included in the following subsections.

2.3.1 Transport Model

As indicated in Subsection 2.2, the transport model selected for this study is the MULTIMED model (USEPA, 1996a). The capabilities of the MULTIMED model are described in

Appendix D. In particular, this model can simulate dilution due to recharge by infiltration along the path of ground water transport. This simulation option assumes that the recharge and resulting dilution are uniformly distributed throughout the effective thickness of the aquifer.

In the case of the Site, the area with potentially contaminated soils was divided into several cells. Each cell was divided into several series of subcells and soil concentrations were measured at different spatial locations in each subcell. In this analysis, the series of subcells with maximum soil concentration of U-238 is used to estimate the concentration in the infiltrating water entering the water table. U-238 concentration in the soil in each subcell is assumed to be uniformly distributed within the width of the subcell nearly perpendicular to the direction of dominant ground water flow. Contaminant concentrations in the soils in the vadose zone at the source are discussed in Subsection 4.6.

Due to desorption by infiltrating water, a portion of the contamination in residual soils in the vadose zone reaches the water table. After its entry into the saturated zone, this dissolved contamination mixes and moves with ambient ground water along the bottom of the contributing subcells. During this transport, it undergoes some dilution due to mixing with ambient ground water and reaches the vertical cross section of the aquifer at the downgradient edge of the contributing subcells. The soils in the area downgradient of the above-mentioned contributing subcells are relatively clean in the model and at the Site. Thus, infiltrating rainwater entering the water table through the vadose zone downgradient of the edge of the contributing subcells is relatively clean and is referred to as recharge (see Figure 2).

Within the abovementioned vertical cross section at the downgradient edge of the contributing subcells, the diluted contamination is distributed down to a depth, designated as the mixing zone depth. This vertical cross section in the saturated zone with its width equal to the width of the subcells and its depth equal to the mixing zone depth constitutes a vertical plane (designated as rectangular patch) source for ground water transport in the model domain.

The rectangular patch source is a vertical plane of finite width and depth located in the saturated zone at the downgradient edge of the relevant series of subcells in Cell 6 (see Figure 2). The concentration in ground water at every point along the vertical plane at the source is the same and does not undergo reduction with time. The effect of source depletion should be progressive reduction in the concentrations at the point of interest with time. Since modeling with a rectangular patch source does not provide for source reduction, the predicted concentration is overly conservative, remaining at a constant level and extending impacts unrealistically into the future.

2.3.2 Desorption Model

The desorption model is used to estimate the concentration of infiltrating water entering the water table beneath the series of subcells with residual contamination in soils in the vadose zone. It is based on the following linear equilibrium model (USEPA, 1988; ANL, 2001):

Eq. (1) $$C = S / K_{du}$$

where, C = equilibrium concentration in water (pCi/ml);
S = mass (or activity in pCi/g) adsorbed per unit mass of soil; and

K_{du} = partition/distribution coefficient (for the unsaturated zone) in milliliters per gram (ml/g).

This model assumes that the mass (or activity) adsorbed per unit mass of the soils (pCi/g) is in equilibrium with the liquid phase concentration (pCi/ml), and the relationship between concentrations in the solid (pCi/g) and liquid (pCi/ml) phases is linear. The parameter K_{du} is assumed to lump the effects of most partitioning processes (e.g., soil texture, soil grain size, soil classification, pH of ground water, and organic carbon content of the soil) into one value. The parameter K_d or K_{du} is discussed in more detail in Subsection 4.1.1.

Using the linear equilibrium model (Eq. 1), the following expression is developed to estimate the concentration in infiltrating water corresponding to the average concentration in the soil column in contributing subcells above the water table (IPCB, 2004):

Eq. (2) $$C_i = (C_s \rho_b) / (\varphi_w + \rho_b K_{du})$$

where, C_i = concentration in infiltrating water in the vadose zone (pCi/ml) entering the water table beneath the subcells;

C_s = average concentration in soils in the contributing subcells (pCi/g);

ρ_b = bulk density of soils in grams per cubic centimeter (g/cc); and

φ_w = water-filled porosity in the unsaturated soil zone (unitless).

Eq. 2 is designated as the desorption model. The concentration in infiltrating water, C_i, is used as input to the MULTIMED model. In this model, the ground water source for downgradient transport is a vertical plane located within the saturated zone at the downgradient edge of the subcells with U-238 in residual soils. With the concentration in infiltrating water reaching the water table as input, the MULTIMED model computes the concentration, C_0, at the ground water source after initial mixing of ambient ground water beneath the subcells with residual contamination in soils.

2.3.3 Retardation Factor

One of the effects of the partition/distribution coefficient on contaminants is to retard the rate (velocity) of transport in ground water. The retardation factor, R (unitless), used as input in the transport model, is computed as follows (USEPA, 1996a):

Eq. (3) $$R = 1 + (\rho_b K_d / \varphi)$$

where ρ_b = bulk density of soils in grams per cubic centimeter (g/cc);

φ = effective porosity in the saturated zone (unitless); and

K_d = partition/distribution coefficient for the saturated zone (ml/g).

Any other consistent set of units may also be used for the variables in Eq. 1-3.

3.0 FIELD DATA FOR GROUND WATER DEPTH AND U-238 CONCENTRATIONS

3.1 DEPTH TO GROUND WATER

Ground surface elevations from Cell 6 to the point of interest on the southern Site boundary vary from approximately 145.23 ft to 142.96 ft. In the vicinity of the Site, the water table was observed between 72 and 74 ft bgs.

3.2 CONCENTRATIONS OF U-238

Field data for U-238 concentrations are available for 112 ground water samples from 12 monitoring wells and 45 ground water profiles. Most of the measured values of U-238 concentrations in ground water were either non-detect or below the MCL. The data for those samples collected in 2002 and 2003 that exceeded 1.0 pCi/L are abstracted in Table 3-1. In addition, data based on analysis of field-filtered samples from three recent profiles are also included (e-mail communications with MPI, June-July, 2005) (see Figure 3). The term 'field-filtered sample' included in footnotes b and c to Table 3-1 indicates that the particulate matter in the ground water sample was filtered out before analyzing the filtrate for U-238 concentration.

Table 3-1. Observed U-238 Concentrations in Select Monitoring Wells and Profiles

Profile or Monitoring Well	Approx. Location (See Figure 4)	Depth (bgs) (ft)	Date of Sampling	U-238 Concentration (pCi/L)
P-2[a]	On the 140 Property, subcell W10, approximately 113 ft east of the 100 Building	98.8	October-December, 2002	1.27 (+ or – 0.44)
P-6[a]	On the 100 Property, subcell P23, approximately 90 ft south of the southeast corner of the 100 Building	82.8	October-December, 2002	2.43 (+ or – 0.78)
P-28[b]	On the Golf Course Driving Range, subcell 22A, approximately 63 ft east of the 100 Property	87.02	May 3, 2003	1.03 (+ or – 0.38)
P-35[a]	On the 70 Property, subcell W73, approximately 85 ft north of the 70 Building	87.2	July 9, 2003	1.43 (+ or – 0.48)
MW-01[a]	On the 70 Property, border of subcells F22 and F23, approximately 58 ft north of the 70 Building	58-78 (screened interval)	March 15, 2003	2.22 (+ or – 0.72)
MW-02[a]	On the 70 Property, subcell I22, approximately 56 ft north of the 70 Building	59-79 (screened interval)	March 15, 2003	38.3 (+ or – 8.1)
MW-12[a]	On the 70 Property, subcell R32, approximately 13 ft northwest of southeast corner of the 70 Property	120-130 (screened interval)	March 15, 2003	1.76 (+ or – 0.60)
P-103[c]	On the 100 Property, subcell G21, approximately 50 ft south of the 100 Building	74	April 19, 2005	26.5 (+ or – 2.9)
		84.5	April 19, 2005	3.34 (+ or – 0.62)
P-107[c]	Located on the 140 Property, appears to straddle subcells R08 and U08, approximately 73 ft east of the 140 Building	74.30	May 16, 2005	96 (+ or – 11)
		84.30	May 16, 2005	56.3 (+ or – 5.8)
		94.30	May 17, 2005	6.1 (+ or – 1.6)
		104.30	May 17, 2005	11.6 (+ or – 2.2)
P-108[c]	Located on the 100 Property, subcell W18, 100 ft east of the 100 Building and downgradient of Cells 1, 2, 6, and 3	84.15	May 02, 2005	0.75 (+ or – 0.28)

[a]Based on analysis of an unfiltered sample.
[b]Based on analysis of a field-filtered sample.
[c]Based on analysis of a field-filtered sample as per MPI (e-mail communications, June-July, 2005).

As noted in Table 3-1, the maximum concentrations of U-238 detected were between 10 to 20 ft below the water table. All concentrations measured below 100 ft bgs (30 ft or more below the water table) are below or close to the lower limit of MCL for U-238 (10 to 22.5 pCi/L).

The data collected and listed in Table 3-1 indicate that there is significant variation in measured concentrations in different monitoring wells and profiles, and it is difficult to identify specific concentrations which may be used for model calibration. Additional limitations associated with this data include the following:

- The uranium found in soils existed in thin zones and not large source areas. The locations and dimensions (i.e., length, width, depth) of the uranium-impacted soils and the specific concentrations of uranium therein which may be the source of ground water concentrations shown in Table 3-1 are not known.

- It is difficult to estimate the durations of the transport of uranium through the unsaturated and saturated soil zones from the source or sources to the respective profile or monitoring well indicated in Table 3-1.

- The concentrations in ground water at the respective sources and the corresponding mixing zone and effective aquifer depths applicable to the concentrations shown in Table 3-1 are difficult to identify.

- The orientations of the ground water flow paths to various profiles and monitoring wells and other transport parameters applicable to the transport process are also not known. This is further complicated by the fact that various sources of ground water recharge and extraction operated in the Site vicinity and historically have changed over time. These changes have locally impacted ground water flow rates and directions and resulted in the concentrations shown in Table 3-1.

Because of the above-mentioned limitations, the data included in Table 3-1 are not used for a quantitative model calibration. Instead, they are used for a qualitative assessment of the model parameters and model results presented in this study.

4.0 ESTIMATION OF RELEVANT MODEL PARAMETERS

The adopted model input parameters include Site-specific parameters based on field measurements, laboratory analysis of soil samples from boreholes in the vicinity, and information available in the literature.

4.1 SITE-SPECIFIC SOIL CHARACTERISTICS

Soil samples from various locations and depths have been analyzed to estimate specific values of relevant parameters. The results of the analysis for soils in the vicinity of the Site are summarized in the following subsections.

4.1.1 Solid/Liquid Phase Partition or Distribution Coefficient

Definition

The partition or distribution coefficient (K_{du} for unsaturated or vadose zone and K_d for saturated zone) is a soil parameter which is used to assess the degree to which a chemical species will be distributed in the solid and liquid phases. It provides an indication of how rapidly an ion can move relative to the rate of ground water movement under the geochemical conditions tested (ASTM, 1990). In simpler terms, K_d is defined as the concentration of a chemical of interest in the solid phase divided by the concentration of that species in the liquid phase, at steady-state (Brookhaven National Laboratory, 1999). In this analysis, the parameter K_{du} or K_d quantifies certain sorption (adsorption/desorption) processes relevant to the transport of uranium from the soils at the Site to the point of interest.

The soils in the unsaturated zone at the Site generally consist of poorly graded or gravelly sands with little or no fines which have a group symbol of SP according to the Unified Soil Classification System (USCS) (see Appendix F). Soils in the saturated zone at the Site generally consist of poorly graded or gravelly sands with little or no fines (USCS group symbol SP) with mixtures of silty sands (USCS group symbol SM). The average reported value of K_{du} or K_d for uranium for sandy soils is 35 ml/g and generally higher average values are reported for finer materials (USEPA, 1999).

Site-specific Sampling

Usually, K_{du} or K_d values used for ground water transport modeling are obtained from literature or laboratory analysis of soil samples from a studied area. The K_{du} or K_d values for total uranium (or U-238) used for this analysis were obtained from laboratory analysis of soil samples collected from several locations at various depths around the Site using the ASTM batch equilibrium method, ASTM D4319-83 as interpreted by Severn Trent Laboratories in their Standard Operating Procedure *K_d Leaching Procedure,* revision April 19, 2004 (see locations KD1, KD2, KD3, and KD4, Figure 3).

The K_{du} or K_d values measured in laboratory analysis pertain to total uranium. However, detailed field information regarding uranium found in residual soils relates to U-238. As such, the U-238 transport analysis assumes that the values of K_{du} or K_d estimated for total uranium are applicable to U-238 as well (see Appendix A).

Results of Laboratory Analysis

Generally, the same values of K_{du} and K_d are assumed to be applicable to both unsaturated and saturated soils. Laboratory analysis for K_{du} and K_d for soil samples from different depths at and adjacent to the Site indicated that there is appreciable variation with depth. In particular, the values for the saturated zone were lower than the values for the vadose zone.

In Cell 6, contaminated soils have been excavated and replaced with clean fill down to an average depth of approximately 23 ft bgs. Contaminated soils in Cell 1, upgradient and east of Cell 6, have been excavated and replaced with clean fill down to an average depth of approximately 21 ft bgs. The average depth down to which soils have been excavated and replaced with clean fill in series U subcells in Cell 6 and Cell 1 (i.e., subcells U04 to U11) is approximately 26 ft bgs. Laboratory analysis of six samples from various locations in the unsaturated zone in the Site vicinity from depths ranging from 30 to 42 ft bgs indicate an average Site-specific value of 5.45 ml/g for K_{du} for uranium. The range of K_{du} values for these six values from the unsaturated zone was 2.98 to 7.72 ml/g.

Laboratory analysis of seven soil samples from various locations in the saturated zone in the Site vicinity from a depth range of 70 to 110 ft bgs indicated an average value of 0.89 ml/g for K_d. The range of K_d values for these seven values from the saturated zone was 0.52 to 1.01 ml/g.

Computations for the baseline case for Cell 6 and Cell 1 were made using the average values of $K_{du} = 5.45$ and $K_d = 0.89$ ml/g for the unsaturated and saturated zones, respectively.

Implication of Site-specific K_{du} or K_d Values

A review of Site-specific K_{du} and K_d values indicates that they are generally lower than the average values reported in the literature for similar soils (i.e., sands) (USEPA, 1999).

The low (compared to literature values) Site-specific K_{du} or K_d values for uranium result in the following notable consequences so far as the transport of uranium is concerned:

- A higher equilibrium concentration of the contaminant in pore water in the subcells (see Eq. 1, Subsection 2.3.2);
- A higher concentration in infiltrating rainwater entering the water table (see Eq. 2, Subsection 2.3.2); and
- Lower retardation of the contaminant of interest (i.e., faster rate of movement of dissolved uranium with ground water) (see Eq. 3, Subsection 2.3.3).

4.1.2 Organic Content

Since Site-specific K_d or K_{du} values have been determined, organic carbon content is not required to estimate K_d or K_{du} values for this analysis.

4.1.3 Hydraulic Conductivity

Laboratory analysis of three soil samples from depths of 25 to 64 ft bgs collected from Boring KD4 (Figure 3) indicated a Site-specific geometric mean hydraulic conductivity of 1.64×10^{-2} cm/sec (i.e., 46.50 ft/day or 5171.9 m/yr). The three test results varied from 1.15×10^{-2} to 2.22×10^{-2} cm/sec (32.6 to 62.93 ft/day or 3626.6 to 7001 m/yr). While the above samples were collected from the Upper Glacial deposits, the results were consistent with reported values of the hydraulic conductivity of the Magothy Formation, which range from 27 ft/day to 150 ft/day (see Subsection 4.5) (CDM, 2003). The average value of 5171.9 m/yr (46.50 ft/day) is used for the baseline scenario simulated in this study.

4.1.4 Porosity

The three soil samples from Boring KD4 (depths of 25 to 64 ft bgs) were analyzed in the laboratory for dry unit weight and specific gravity. The porosity of the soils is estimated using the measured values of dry unit weight and specific gravity. The estimated values of porosity for the three samples vary from 0.386 to 0.413 with an average value of 0.39 for soils in the vicinity of Cell 6 and Cell 1. For unconsolidated sediments coarser than silt size, effective porosity can be less than total porosity by approximately 2% to 5%. Typical values of effective porosity for fine to coarse sands reported in the literature vary from 0.10 to 0.35 (USEPA, 2000). The reported mean values of specific yield (which is generally equal to the effective porosity) for fine to coarse sands are between 0.30 and 0.33 (USEPA, 1985).

In view of the above, the effective soil porosity (φ) under saturated conditions is taken to be 0.30.

Default soil porosity under unsaturated soil conditions may vary from 0.15 at the ground surface to 0.30 for subsurface conditions and from 0.18 for sand to 0.20 for gravel (IPCB, 2005). Use of an empirical equation included in Tiered Approach to Corrective Action Objectives (TACO) (IPCB, 2004) suggests values in the range of approximately 0.16 to 0.19.

In view of the above, a value of 0.18 is adopted for porosity under unsaturated soil conditions (φ_w). Minor variations in the adopted value of porosity under unsaturated conditions (e.g., in the approximate range from 0.17 to 0.20) are not expected to have significant effect on the results of this analysis.

4.1.5 Bulk Density

Based on the results of the aforementioned laboratory tests of the three soil samples for dry unit weight, the bulk density of soils in the vicinity of Cell 6 and Cell 1 is estimated to vary from 1.55 to 1.63 grams per cubic centimeter (g/cc) with an average of 1.60 g/cc. The average value of 1.60 g/cc is used in this analysis.

4.2 RADIOACTIVE DECAY

In most environmental transport models, the term decay is defined by the first-order decay coefficient which is a function of the half life of the constituent. U-238 has a relatively long half life of 4.47E+09 years resulting in little decrease in U-238 concentrations due to natural decay during the time period of interest in this study (www.ornl.gov/sci/isotopes). The other natural isotopes of uranium also have relatively long half lives (i.e., half life of U-234 = 2.46E+05 years and half life of U-235 = 7.04E+08 years). The longer half life (i.e., half life of U-238) with the corresponding lower decay coefficient of 0.155E-09 year^{-1}, is used in this study to analyze the transport of U-238.

4.3 HYDRAULIC GRADIENT

The selected ground water transport model simulates the propagation of concentration along a specified direction of ground water flow, i.e., along a vertical profile of the aquifer with distinct localized hydraulic gradient. By definition, this localized hydraulic gradient (unitless) for ground water in unconfined situations is the slope of the water table between two points of interest or between points closest to the two points of interest on the above-mentioned vertical profile.

The dominant on-Site ground water flow direction and localized hydraulic gradient were identified from available field data. While the regional ground water flow direction in the vicinity of the Site is towards the south, small areas may have localized variation. This localized variation is important for ground water transport modeling within the relatively short transport distance considered in this study (see Figure 1).

For Cell 6, the source in ground water is assumed to be located at the downgradient edge of subcell U11 (see Subsection 4.6). For Cell 1, the source in ground water is assumed to be located at the downgradient edge of subcell U07 (see Subsection 4.6). Thus, the localized hydraulic gradient applicable to the transport of dissolved uranium from subcells in series U in Cell 6 and Cell 1 to the point of interest is estimated by the difference in ground water levels in the monitoring wells closest to the downgradient edge of subcell series U of Cell 6 and Cell 1 and the point of interest.

To estimate the localized hydraulic gradient, ground water elevations were used from three on-Site monitoring wells for two monitoring events. The localized hydraulic gradient was taken to be the average of values computed from ground water elevations measured during the December 2002 (URS Corporation, unpublished data) and March 2003 sampling events for monitoring wells MW-07, MW-11, and MW-09. Monitoring well MW-07 is located downgradient of Cell 1 and Cell 6 and MW-09 and MW-11 are located further downgradient near the southern Site boundary (see Figure 3). These three monitoring wells were selected because they define the plane representing the water table in the area between Cell 6 and Cell 1 and the southern Site boundary.

Three different approaches were used to estimate the average hydraulic gradient using observed ground water elevations for the aforementioned monitoring wells, MW-07, MW-09, and MW-11 (see Appendix G).The estimated average hydraulic gradients using the three approaches are 0.00049, 0.00054, and 0.00056, respectively. To be conservative, the highest value of 0.00056 is used in this study.

The length of the transport distance from the downgradient edge of subcell U11 of Cell 6 to its intersection with the southern Site boundary is estimated to be 490 ft (149 m). The length of the transport distance from the downgradient edge of subcell U07 of Cell 1 to its intersection with the southern Site boundary is estimated to be 579 ft (176.5 m).

4.4 DISPERSIVITY

The spreading of a contaminant dissolved in ground water beyond the region it is expected to occupy due to average flow alone is called dispersion. It is quantified by a factor called the dispersion coefficient. The dispersion coefficient is a function of a soil property known as dispersivity and the velocity of ground water through soil pores.

There is large variation in values of dispersivities reported in the literature (e.g., Maidment, 2003; USEPA, 1985). Based on commonly used practice, the longitudinal (α_x), transverse (α_y), and vertical (α_z) dispersivities for this analysis are estimated using the following equations (USEPA, 1996a; IPCB, 2004; ASTM , 1995), i.e.,

Eq. (9) $(\alpha_x) = 0.1\ x$

Eq. (10) $(\alpha_y) = (\alpha_x)/3$ and

Eq. (11) $(\alpha_z) = 0.056\ (\alpha_x)$,

where x = the length of the ground water flow path (m).

These equations are based on a review of a range of values reported in the literature, are generally accepted for screening level (which are normally considered to be conservative and preliminary) analyses, and are included in several commonly used industry guides (e.g., IPCB, 2004; ASTM, 1995). In addition, they are included as 'other commonly used relationships' in several other models (e.g., USEPA, 1996b; USEPA, 2000b).

4.5 EFFECTIVE AVERAGE AQUIFER THICKNESS

Three major aquifers exist in the Site vicinity (i.e., Upper Glacial at the top underlain in order by the Magothy, and Lloyd Aquifers). These aquifers are interconnected to various degrees and the combined depth is fairly large (i.e., more than 600 ft) (Isbister, 1966). Recent Site-specific ground water investigations indicate that the Upper Glacial deposits in the vicinity extend to approximately 75 ft bgs. The water table was observed between 71 to 74 ft bgs, which is near the contact between the Upper Glacial and Magothy Aquifer. Thus, the saturated thickness of interest for this study is primarily within the Magothy Aquifer. The Magothy Aquifer was encountered during recent area investigations from approximately 75 ft bgs to as deep as 532 ft bgs (as noted by Malcolm Pirnie during their ground water investigation in 2004 - 2005).

During ground water investigations, silt and clay lenses were encountered beneath and downgradient of the Site. This may limit the effective aquifer thickness available for contaminant transport. Also, the vertical dispersivity of the medium is relatively low (see Sub Section 4.4 and Table 5-1). These factors are expected to limit the depth of the zone of effective U-238 transport and effective thickness of the aquifer relevant to the transport of U-238 with ground water.

A review of the data for profiles downgradient or south and southwest of Cell 1 (i.e., P-103 and P-108) included in Table 3-1 indicates relatively low concentrations of U-238 at a depth of 84.5 ft bgs (or approximately 10 ft below the water table). In addition, there is significant reduction in U-238 concentrations with depth in Profile P-107 which is also located within Cell 6, downgradient of Cell 1. This suggests that a relatively small portion of the total aquifer depth may be effective along the path of any appreciable transport of U-238 from Cell 6 and Cell 1.

In view of the above, a relatively small effective aquifer thickness of 30 ft (i.e., extending to approximately 102 to 104 ft bgs) is used. The mixing zone depth corresponding to this effective aquifer thickness is internally calculated in the MULTIMED model using an analytical equation (IPCB, 2004; and USEPA, 1996a).

4.6 U-238 CONTAMINATION IN RESIDUAL SOILS AT SOURCE

The characteristics of the U-238 contamination at the source in soils in series U subcells in Cell 6 and Cell 1 are described in the following subsections.

4.6.1 U-238 Concentration in Soils at Source

Measured concentrations of U-238 are available to a depth of approximately 64 ft bgs at various spatial locations in several borings in Cell 6 and Cell 1. Because of different spatial locations of the borings, several values are available at each depth.

Cell 6 is divided into three series (rows) of subcells, Q, R, and U (Figure 1). Each series of subcells constitutes a linear segment for U-238 or total uranium transport to the point of interest. The contamination originating from soils at different depths in a particular vertical column or subcell is likely to appear as mixed dissolved concentration at the bottom of the column near the water table. This mixed dissolved concentration from all such vertical columns or subcells would be transported downgradient with ambient ground water flow along the length of the series parallel to the direction of ground water flow. Ultimately, this mixed concentration from all columns or subcells in a series would appear at the downgradient edge of the contaminated subcells. The effect of mixing during ground water transport along the length of the subcells is internally computed in the MULTIMED model. Thus, the source concentration of dissolved U-238 or total uranium in ground water in the saturated zone appearing at the downgradient edge of a series of subcells would correspond to the average of depth-wise, width-wise, and length-wise soil concentrations in that series.

Cell 6 includes six subcells in each of series Q and R and four subcells in series U (see Figure 3). The weighted average soil concentration of U-238 in subcells in series U (i.e., subcells U08, U09, U10, and U11) in Cell 6 is higher than the weighted average concentration of U-238 in subcells in series Q (i.e., subcells Q06 to Q11) or subcells in series R (i.e., subcells R06 to R11) (see Figures 1 and 3 and Appendix H). To be conservative, the highest weighted average concentration in soils in subcells U08, U09, U10, and U11 in series U is assumed to be the source concentration in soils in Cell 6.

Subcells U04, U05, U06, and U07 in series U in Cell 1 constitute the upgradient continuation of subcells U08, U09, U10, and U11 in series U of Cell 6 (see Figure 1). The U-238 desorbed from the abovementioned subcells of Cell 1 would likely be transported along the same ground water flow path as the concentration desorbed from series U subcells of Cell 6. Residual soil concentrations in the above subcells in Cell 1 (i.e., U04 to U07) are used to estimate the source concentration in soils to analyze potential transport of U-238 from series U subcells in Cell 1.

The weighted average concentrations of U-238 in subcells U08 to U11 in series U in Cell 6 and U04 to U07 in Cell 1 are estimated from measured concentrations in soils at various depths within the areas occupied by these subcells. The computations are made using the EVS software (C Tech Development Corporation, 2005). The EVS software uses a three-dimensional interpolation algorithm to estimate concentrations at various points within the specified model domain based on relative proximity of each point from the surrounding points where measured values are available. The resulting grid or contours are used to estimate the volume or mass of soils and mass of contaminants represented by each point on the grid or between specified contours. This information is used to estimate the weighted average concentration in the specified model domain (e.g., an individual subcell).

Using the results of the EVS model for each subcell, the weighted average concentrations of U-238 in the soil mass at the source in Cell 6 (i.e., subcells U08 to U11) and Cell 1 (i.e., subcells U04 to U07) are estimated. These computations are made using the following equation:

Eq. (12) $$X = [\sum w_i x_i] / [\sum w_i]$$

where X = weighted average concentration of U-238 (pCi/g) in subcells U08 to U11 in Cell 6 or U04 to U07 in Cell 1;
i = index identifying an individual subcell (e.g., U04, U05, etc.);
w_i = mass of soil (g) in subcell i;
x_i = weighted average concentration (pCi/g) within subcell i as estimated by the EVS software; and
$\sum$ = summation over all subcells from U08 to U11 in Cell 6 or U04 to U07 in Cell 1.

The information used to estimate the weighted average concentration of U-238 in the soils at the source is included in Table 4-1.

Table 4-1. Weighted Average Concentrations of U-238 in Soils at Source

Cell	Subcell	Average thickness of residual soils in subcell[a] (ft)	Mass of residual soils[a] (kg)	Weighted average U-238 concentration in subcell[a] (pCi/g)
6	U08	41.17	776,320	8.25
6	U09	48.73	933,680	12.76
6	U10	57.54	1,089,400	9.95
6	U11	57	1,081,200	4.88
Weighted average U-238 concentration in the four subcells in Cell 6 (Eq. 12) = 8.87 pCi/g				
1	U04	60.98	1,162,800	6.24
1	U05	50.85	951,900	20.31
1	U06	33.88	648,770	17.49
1	U07	34.57	650,610	14.08
Weighted average U-238 concentration in the four subcells in Cell 1 (Eq. 12) = 13.79 pCi/g				

[a]EVS model output (see Appendix H).

The average of the thicknesses of residual soils with U-238 contamination at the source in Cell 6 shown in Table 4-1 is approximately 51 ft (15.58 m) and the estimated weighted average concentration of U-238 is 8.87 pCi/g. The corresponding source concentration of total uranium in soils at the source is taken to be twice the value for U-238 (i.e., a concentration of 17.74 pCi/g of total uranium in soils at the source).

The average of the thicknesses of residual soils with U-238 contamination at the source in Cell 1 shown in Table 4-1 is approximately 45 ft (13.74 m) and the estimated weighted average concentration of U-238 is 13.79 pCi/g. The corresponding source concentration of total uranium in soils at the source is taken to be twice the value for U-238 (i.e., a concentration of 27.58 pCi/g of total uranium in soils at the source).

The desorption model (Subsection 2.3.2, Eq. 2) is used to estimate the concentration of U-238 entering the water table beneath subcell series U in Cell 6 and Cell 1 corresponding to the afore-mentioned concentrations in soils at the source (see Figure 2).

4.6.2 Length and Width of U-238-impacted Soils at Source

Cell 6 is not rectangular in plan (see Figure 3). The length of subcells U08 to U11 in Cell 6 along the direction of ground water flow is approximately 90 ft (27.5 m). This is the length along which desorbed U-238 enters the water table at the concentration, C_i, estimated by the desorption model (Eq. 2). The width of series U subcells in Cell 6 (i.e., U08 to U11), nearly perpendicular to the direction of dominant ground water flow, is 20 ft (6.1 m). This is the width along which desorbed U-238 enters the water table.

The length and width of subcells U04 to U07 in Cell 1 are approximately the same as in Cell 6.

Upon entry into the saturated zone, the desorbed U-238 undergoes mixing with ambient ground water as it moves along the length of the contaminated soils (i.e., subcells U08 to U11 in Cell 6 and subcells U04 to U07 in Cell 1) at source. It is assumed that there is little lateral dispersion along this length. Therefore, the width of the contaminated water that reaches the downgradient edge of the contaminated soils at source remains the same as the width of the subcells. The initial dilution along this length of transport and the mixing zone depth, H, at the downgradient edge of this length are internally computed by the MULTIMED model. Due to mixing during this transport, the concentration changes from C_i to C_0. It is the above-mentioned width, mixing zone depth, and concentration in ground water, C_0, at the downgradient edge of the subcells in Cell 6 and Cell 1 that constitute the physical dimensions and ground water concentration for the vertical plane source in the saturated zone in each cell used for ground water transport simulation in the MULTIMED model (see Figure 2).

4.7 PRECIPITATION, RECHARGE, AND INFILTRATION

In the MULTIMED model, the term infiltration is used to define the portion of precipitation that percolates through the impacted soil at the source and enters the water table. With greater infiltration, more contaminant is mobilized from the soil into the ground water. Recharge is defined as the portion of precipitation that percolates from the ground surface along the path of ground water transport and enters the water table as relatively fresh water (i.e., water that is not impacted by the contamination at the source). Greater recharge means more dilution of contaminant along the path of ground water transport. Infiltration or recharge is estimated as precipitation minus surface runoff and other losses applicable to the source area or domain of ground water transport. They are expressed as the volume of water percolating per unit time per unit area of surface (i.e., m^3/yr per square meter, or more commonly, m/yr).

4.7.1 Precipitation

The average annual precipitation for the period 1951-1980 at Mineola, New York is approximately 1.11 m (Gale Research Company, 1985). Based on 10 years (1994 to 2003) of daily precipitation data for Mineola, New York (with 48 missing daily values) the average annual precipitation is estimated to be 43.7 inches (1.11 m) (nrcc@cornell.edu). Mineola is approximately 7 miles west of Hicksville. This suggests that an annual average precipitation of 1.11 m is reasonable for the Site area.

4.7.2 Recharge

On an average, approximately 25 percent or more of annual precipitation is expected to infiltrate into the ground (Avon and Durbin, 1994; Donovan and Katzer, 2000). The 25 percent value is reported for arid climates. The average annual recharge in the Site vicinity, which is sub-humid to humid, is expected to be larger than 25 percent (e.g., 33 percent to 45 percent) of the average annual precipitation.

Previous studies reported in the literature have used different rates of recharge/infiltration. A report describing the Nassau County Groundwater Model (CDM, 2003) states an overall recharge rate of 51.8 percent of precipitation for the model as a whole. A qualifier is added suggesting that this amount of recharge could be slightly higher than would be expected during a normal year. This suggests that an overall recharge rate in the model domain may be approximately 50 percent of precipitation or 0.56 m/year for the region. However, in the tabulated values of recharge in the CDM (2003) report, a rate of 80 percent of precipitation is shown for Nassau County. This suggests a recharge rate of approximately 0.89 m/year for the Site area.

A USGS modeling study for Kings and Queens Counties, Long Island, New York (USGS, 1999) indicates a recharge rate of approximately 23.1 inches/year or 0.59 m/year for Nassau County.

The estimated, reported, and adopted rates of annual recharge for the Site are abstracted in Table 4-2.

Table 4-2. Estimated, Reported, and Adopted Rates of Annual Recharge

Source	Annual Recharge Rate (m/yr)
Estimated as fraction of annual precipitation (Avon and Durbin, 1994; Donovan and Katzer, 2000)	0.37 to 0.50
CDM (2003)	0.56-0.89
USGS (1999)	0.59
Adopted (along potential path of ground water transport)	0.59

The information presented in the previous paragraphs and abstracted in Table 4-2 suggests that an average recharge rate of 0.59 m/yr may be reasonably conservative for the path of ground water transport from the area occupied by Cell 6 and Cell 1 to the point of interest.

Recharge immediately below paved areas or areas occupied by buildings may be significantly lower. However, Nassau County regulations require that a system of leach basins should provide for most of the storm water runoff from a site to discharge into the subsoil even if the area is paved. This results in a greater portion of precipitation entering the ground water regime and greater net recharge.

4.7.3 Infiltration

Infiltration from unpaved source areas is taken to be the same as the recharge described in Subsection 4.7.2 (i.e., 0.59 m/yr).

If the source area occupied by subcells U04 to U11 in Cell 6 and Cell 1 were to be paved, then water infiltration through the underlying unsaturated soils and the resulting contamination entering the saturated zone would be significantly reduced. For an estimate of the infiltration rate for paved areas, the Soil Conservation Service (SCS) curve number method is used (USDA, 1986). It is assumed that the entire amount of annual rainfall that does not appear as surface runoff from paved areas is lost as infiltration. The SCS curve number (CN) for paved areas is reported to be 98 (USDA, 1986). Computations using the SCS curve number method, with CN = 98, suggest that the annual infiltration from paved areas corresponding to an annual rainfall of 1.11 m may approximate 0.006 m (USDA, 1986). The infiltration rate at the location of the subcells may be even smaller than this if buildings were to occupy the surface area.

The estimated rates of annual infiltration for the Site are abstracted in Table 4-3.

Table 4-3. Estimated Rates of Annual Infiltration

Surface Condition	Annual Infiltration Rate (m/yr)
Unpaved areas of subcells	0.59
Paved areas of subcells (USDA, 1986)	0.006

5.0 BASELINE SIMULATION SCENARIO

The baseline scenario is modeled using average values of the estimated model parameters and rectangular source configuration in the MULTIMED model. In statistical terms, use of the average model parameters is expected to provide the most plausible results.

The baseline scenario assumes that the area occupied by subcell series U of Cell 6 and Cell 1 (i.e., subcells U04 to U11) remains unpaved with an infiltration rate of 0.59 m/yr through the U-238-impacted residual soils.

The path of ground water transport intersects the southern Site boundary approximately 149 m from the downgradient edge of subcell U11 in Cell 6 (see Figure 1). This intersection with the southern Site boundary is the point of interest for model predictions. The length of the ground water flow path from the downgradient edge of subcell U07 in Cell 1 to the above point of interest is approximately 176.5 m.

Potential transport of U-238 is simulated using the average values of measured Site-specific parameters. Thus, the input parameters of this case include K_{du} and K_d values of 5.45 and 0.89 ml/g, respectively, for the unsaturated and saturated soil zones; geometric mean value of hydraulic conductivity, i.e., 5171.9 m/yr (46.50 ft/day); average annual recharge rate of 0.59 m/yr along the path of ground water transport; and infiltration rate of 0.59 m/yr for the unpaved surface of subcells U08 to U11 in Cell 6 and U04 to U07 in Cell 1.

Relevant input parameters for this baseline scenario for transports from Cell 6 and Cell 1 are abstracted in Table 5-1.

Table 5-1. Input Model Parameters for Baseline Scenario

Effective soil porosity (saturated conditions) (φ)	0.30
Water-filled soil porosity (unsaturated conditions) (φ_w)	0.18
Soil bulk density (ρ_b)	1.60 g/cc
Average hydraulic conductivity (K)	5171.9 m/yr (46.5 ft/day)
Average hydraulic gradient (i)	0.00056
Average recharge rate (along path of ground water transport) (q)	0.59 m/yr (23.2 in/yr) (see Table 4-2)
Average infiltration rate in area occupied by series U subcells in Cell 6 and Cell 1 (I)	0.59 m/yr (23.2 in/yr) (see Table 4-3)
Effective aquifer thickness gradient (B)	9.14 m (30 ft)
Partition/distribution coefficient for unsaturated zone (Average of measured values) (K_{du})	5.45 ml/g
Partition/distribution coefficient for saturated zone (Average of measured values) (K_d)	0.89 ml/g
Retardation factor in saturated zone (Eq. 3, Subsection 2.3..3) (R)	5.75
Radioactive decay constant for U-238 (λ)	1.55E-10 yr^{-1}
Source depletion coefficient	0.0 yr^{-1}
Distance from downgradient edge of subcell U11 in Cell 6 and U07 in Cell 1 to downgradient point on southern Site boundary (x)	149 m (490 ft) Cell 6; 176.5 m (579 ft) Cell 1
Longitudinal dispersivity (α_x)	14.9 m (49 ft) Cell 6; 17.65 m (57.9 ft) Cell 1
Transverse dispersivity (α_y)	4.97 m (16.3 ft) Cell 6; 5.88 m (19.3 ft) Cell 1
Vertical dispersivity (α_z)	0.83 m (2.74 ft) Cell 6; 0.988 m (3.24 ft) Cell 1
Length of series U subcells in Cell 6 or Cell 1 (L)	27.5 m (90 ft)
Width of series U subcells in Cell 6 or Cell 1 (W)	6.1 m (20 ft)
Initial concentration of U-238 in soils (C_s)	8.87 pCi/g in Cell 6 and 13.79 pCi/g in Cell 1
Concentration of U-238 in rainwater entering the saturated zone (Eq. 2, Subsection 2.3.2) (C_i)	1,595 pCi/L (or 1.6 pCi/mL) in Cell 6 and 2,479 pCi/L (or 2.5 pCi/mL) in Cell 1

The three-dimensional transport equation on which the MULTIMED model is based is linear (USEPA, 1996a). Therefore, the total contribution of the two sources (i.e., series U subcells in Cell 6 and Cell 1) at the point of interest is approximated by linear superposition of the results for transport from the two sources.

The rectangular patch source configuration implies that U-238 concentration in soils is uniformly distributed and remains at 8.87 pCi/g in Cell 6 and 13.79 pCi/g in Cell 1 within the width of the subcells for all times in the future.

For the baseline scenario, the maximum predicted concentration at the point of interest (i.e., southern Site boundary) is 11.0 pCi/L. This is close to the lower limit of the range of MCL for U-238 (i.e., 10 to 22.5 pCi/L). The predicted maximum concentration occurs after approximately 225 years from the start of the transport process and stays at that level thereafter due to the conservative assumption of a continuous source. At 5 m (16.5 ft) downgradient of the Site boundary, this maximum concentration reduces to 10 pCi/L. As noted in Section 2.3.1, because source depletion is not included in the analysis, the concentration at the point of interest remains at the equilibrium (or steady-state) value indefinitely.

6.0 CONCLUSION

Potential transport of U-238 or total uranium from residual soils in Cell 6 at the Site has been analyzed using the MULTIMED model. The input data for this preliminary study include values based on commonly used practices, information available in the literature, and measured Site-specific parameters. In particular, values of partition/distribution coefficient are obtained from several soil samples from several locations and depths in the Site vicinity. Geotechnical properties including hydraulic conductivity, porosity, and soil bulk density are estimated from laboratory analysis of several soil samples obtained from Boring KD4, which is close to Cell 6 and Cell 1 (see Appendix F and Figure 3).

Residual soils in series U subcells are found to contain the maximum concentration of U-238 in Cell 6. Series U subcells in Cell 1 are upgradient of series U subcells in Cell 6. Therefore, U-238 concentrations in residual soils in series U subcells in both Cell 6 and Cell 1 are considered in this analysis. The estimated weighted average concentrations of U-238 in residual soils in series U subcells in Cell 6 and Cell 1 are 8.87 pCi/g and 13.79 pCi/g, respectively. These concentrations are used to estimate the U-238 concentration in infiltrating rainwater entering the saturated zone beneath the subcells in the respective cells (i.e., Cell 6 and Cell 1). The total contribution of the two sources (i.e., series U subcells in Cell 6 and Cell 1) to ground water concentrations at the point of interest is obtained by linear superposition.

A baseline scenario is simulated using average values of parameters obtained from laboratory analysis of soil samples and a vertical plane rectangular patch source configuration assuming that the area occupied by subcell series U in Cell 6 and Cell 1 remains unpaved or undeveloped.

The rectangular patch source implies constant and uniform concentration within the width of the source, which is equal to the width of the subcells. This is consistent with the use of a weighted average soil concentration in subcell series U.

The result of the scenario with rectangular patch source configuration for a condition which postulated that the area occupied by subcell series U in Cell 6 and Cell 1 is paved is included in Appendix E.

The results of this study are summarized in Table 6-1 and discussed in the following subsections. Note that the predicted maximum concentrations at the point of interest on the southern Site boundary are close to or below the lower limit of the range of applicable MCL for U-238 (i.e., 10 to 22.5 pCi/L).

Table 6-1. Results of Ground Water Transport Analysis (includes Sources in Soils in Cell 6 and Cell 1)

Description of Scenario	Estimated total Concentrations at Point of Interest (due to U-238 contamination in residual soils in subcell series U in Cell 6 and Cell 1)
Point of Interest	Southern Site boundary, 149 m from source in Cell 6 and 176.5 m from source in Cell 1
BASELINE SCENARIO	
Average soil parameters; unpaved cell surface	
Maximum concentration of U-238 (pCi/L)	11.0
Maximum concentration of total uranium[a] (pCi/L)	22.0
Approximate time to maximum concentration (years)	225
PAVED CELL SURFACE (APPENDIX E)	
Reduced infiltration; more conservative model parameters	
Maximum concentration of U-238 (pCi/L)	0.27
Maximum concentration of total uranium[a] (pCi/L)	0.54
Approximate time to maximum concentration (years)	150

[a]Predicted maximum concentration reduces to 10 pCi/L at approximately 5 m (16.5 ft) downgradient of the Site boundary.
[b]MCL for total uranium is 20 to 45 pCi/L or 30 μg/L (Appendix A).

Simulation with average values of Site-specific parameters with a vertical plane rectangular patch source configuration indicates a maximum U-238 concentration of 11 pCi/L in ground water at the southern Site boundary. This concentration is close to the lower limit of the range of MCL (i.e., 10 to 22.5 pCi/L) for U-238. Based on this simulation, the corresponding maximum concentration of total uranium in ground water is approximately 22 pCi/L. This indicates that future concentrations of U-238 or total uranium in ground water at the southern Site boundary associated with the soils containing residual uranium in Cell 6 are close to the lower limit of the respective ranges of MCLs of 10 to 22.5 pCi/L for U-238 and 20 to 45 pCi/L for total uranium.

It is likely that the area occupied by Series U subcells in Cell 6 and Cell 1 may be developed in future. To evaluate the effect of paved surface of subcell series U in Cell 6 and Cell 1, an additional simulation was conducted assuming more conservative model parameters (see Appendix E). Even with relatively more conservative model parameters, the predicted concentration of U-238 at the southern Site boundary for this case is 0.27 pCi/L. With a paved surface of subcells, infiltration through residual soils with U-238 contamination is significantly reduced resulting in significant reduction in predicted U-238 concentrations at the southern Site boundary.

7.0 REFERENCES

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APPENDIX A

RADIOMETRIC AND MASS UNITS AND MCLs FOR URANIUM AND U-238

A.1 Use of U-238 as Indicator of Total Uranium Transport

In its natural state uranium consists of three radioisotopes, U-234, U-235 and U-238, all having uranium chemical properties, but differing in their radioactive characteristics. These radioisotopes each decay through alpha particle emission, but the rates of decay (and emission) for each isotope are very different, as shown by the half-lives shown in Table A-1. The half-life influences the relative abundance when comparing the isotope content by activity (radiological properties) rather than by mass fraction (chemical properties).

Table A-1. Relative Abundances of Uranium Isotopes

Isotope	Half-life (years)	Relative Isotopic Abundance (%)			
		Natural Uranium		3% Enriched Uranium	
		By Mass	By Activity	By Mass	By Activity
U-234	246,000	0.0054	49.0	0.03	82.7
U-235	704,000,000	0.711	2.25	2.96	2.84
U-238	4,470,000,000	99.283	48.7	97.01	14.5

Half-life data from *Chart of Nuclides (14th Edition)*, General Electric Co, San Jose, CA, 1989

During the Site investigations, uranium was analyzed for isotope specificity rather than through chemical analysis for total uranium. The State approved this approach because of the ease and sensitivity of the radiometric method as well as the need to rule out (or identify) the presence of enriched uranium. Enriched uranium is natural uranium processed to enhance the U-235 through removal of a small fraction of the U-238. Uranium used at the Hicksville Site is understood to have included both natural and enriched uranium. Historically, the value of enriched uranium imposed special handling procedures, so that enriched uranium was rarely discarded as waste, but recycled to recapture the valuable asset. Consistent with this understanding, very little enriched uranium was found at the Hicksville Site. And, considering relative isotopic abundance by mass, U-238 makes up 99_{+}% of the total uranium found. As such, U-238 is an appropriate marker for tracking or predicting transport of total uranium.

Chemical properties of total uranium (such as the partition or distribution coefficient or K_d) are unaffected by the radioisotope properties. Thus, K_d for the three radioisotopes is essentially the same as the K_d for uranium. While we use the radiometric properties for detection at very sensitive levels, the radiometric properties are transparent to the physical and chemical processes driving the environmental transport.

Environmental transport is fundamentally a physical transfer process influenced by chemical interactions of the contaminant species, independent of radioisotope properties (Sheppard and Thibault, 1990; Yu et al., 1993). The only radionuclide property with any significant impact on environmental transport is the half-life, in that extremely short-lived radionuclides undergo significant decay during the periods elapsed for environmental transport processes. From Table

A-1 it is seen that all three uranium isotopes have long half-lives, so that the analysis of transport considered at the Hicksville Site is unaffected by uranium decay.

A.2 MCLs for Total Uranium and U-238

The US Environmental Protection Agency (USEPA) regulates uranium in drinking water under the Safe Drinking Water Act, with maximum contaminant levels (MCLs) published in Title 40 Code of Federal Regulations (CFR), Part 141. Uranium is a naturally occurring radioactive element and a heavy metal, and the MCL reflects consideration of both the chemical and radiological toxicities. The USEPA MCL for uranium was set at 30 microgram/liter (μg/L) with an effective date of December 8, 2003 (USEPA 2000). The NYSDEC has adopted the drinking water standard MCL for uranium as an appropriate goal for evaluating impacts of this contaminant on ground water at cleanup sites in New York.

Considering relative abundance by activity, the percentage of each of the U-238 and U-234 isotopes in the soils in Cell 6 is 49%. The percentages in Cell 1 are 49% and 48%, respectively. This is consistent with the information included in Table A-1.

For comparison to the MCL, it is necessary to convert the radiometric measurements (picoCuries or pCi) of specific isotopes to the units of the MCL (microgram or μg) for total uranium. In the supplementary information published when promulgating the MCL for uranium, USEPA indicated that "the typical conversion factors that are observed in drinking water range between 0.67 up to 1.5 pCi/μg" (USEPA 2000). According to USEPA's uranium activity to mass conversion factor guidelines (USEPA, 2002), "the mass to activity ratio for uranium in a water sample varies depending on the isotopic ratio in that water supply. The nature of radioactivity in drinking water is such that there can be a significant difference in the activity due to the mixtures of isotopes in different water supplies." "The major challenge is to determine which factor is most appropriate to use to calculate an exposure point concentration for compliance monitoring or to use in a human health risk assessment. Ideally the activity to mass ratio should be calculated for each water supply but if this is not possible, there is a health protective approach to evaluate compliance with the regulatory level." This health protective approach includes a conversion factor of 0.67 in Tier I and calculated site-specific value in Tier II.

In light of the fact that there are no public or private drinking water wells within a mile downgradient of the Site, it is not anticipated, and is almost improbable, that ground water at the Site boundaries would be used as a source of public water supply. And, ground water entering the public water supply downgradient of the Site would involve ground water contributed by a much larger extent of the aquifer than the limited area under the Site. However, recognizing that significant mixing and dilution with ambient ground water would occur before ground water downgradient of the Site can be extracted for any use, it is reasonable to consider the upper range of conversion factors in the analysis. But, for the present study to be conservative, the full range of factors is presented to qualitatively assess the impacts of uranium in residual soils at Cell 6 and Cell 1 on ground water at the Site boundaries.

Using the recommended range of conversion factors of 0.67 to 1.5 pCi/μg and the total uranium MCL of 30 μg/L, the range of MCL for total uranium in radiometric units can be expressed as 20 to 45 pCi/L.

For the aforementioned abundance activity ratios, the range of MCL of 20 to 45 pCi/L for total uranium can be expressed as 10 to 22.5 pCi/L for U-238 because the ratio of U-238 to total uranium in the soils in Cell 6 and Cell 1 is approximately 49%, i.e., approximately one-half.

Thus in this analysis, the cleanup target of 30 μg/L of total uranium in drinking water is interpreted as 10 to 22.5 pCi/L of U-238 in ground water. Modeling results for U-238 in ground water at the point of interest are compared to this range of 10 to 22.5 pCi/L to evaluate compliance.

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APPENDIX B

COMPARATIVE EVALUATION OF DIFFUSION AND DISPERSION

B.1 Introduction

The contribution of molecular diffusion is not included in the simulation of ground water transport for U-238 because its contribution is small compared to dispersion (see Subsection 2.1). To clarify the rational for this, a comparison of the coefficients of molecular diffusion and dispersion is presented below.

Diffusion or molecular diffusion is a microscopic and molecular scale process that results from the random thermal induced motion of the solute molecules within the liquid phase. It is independent of the advective motion of ground water. Dispersion or mechanical dispersion occurs predominantly on a macro and megascopic scale and is due to mechanical mixing of the solute. Mechanical mixing is caused by velocity variations within the pores, tortuosity of the porous medium, and variations in sizes of pore channels (USEPA, 1985).

In ground water transport modeling, the contribution of diffusion is usually accounted for by adding the molecular diffusion coefficient for the contaminant of concern to the dispersion coefficients. However, the molecular diffusion coefficient for total uranium may be several orders of magnitude smaller than the dispersion coefficients.

B.2 Diffusion Coefficient

Most chemical species are reported to have molecular diffusion coefficient in liquids on the order of 10^{-9} m^2/s to 10^{-10} m^2/s at 20° C and so the contribution of molecular diffusion is not included in most cases of ground water contaminant transport (Waterloo Hydrogeologic, Inc., 1994).

For most simple aqueous species, the diffusion coefficient, D_d, is approximately 10^{-9} m^2/s (0.0315 m^2/yr) (USEPA, 1999, Volume I, Page 2.35). The diffusion coefficient in soils is less than in free aqueous solutions due to the constrained geometry of the porous media represented by media characteristics such as tortuosity and porosity (USEPA, 1999, Volume I; Baehr, 1987). So, the effective diffusion coefficient for the Site conditions may be smaller than 10^{-9} m^2/s.

Based on an experimental investigation of molecular diffusion of radioisotopes, Duursma (1966; USEPA, 1985) reported molecular diffusion coefficients that ranged between 2x 10^{-10} to 6x 10^{-10} m^2/s (0.006 to 0.019 m^2/yr) for trivalent and monovalent ions (both positive and negative) in fine sand.

While the above values are not specific to the temperatures and other environmental conditions at the Site, they provide reasonable guidance for use in the analysis. The reasonableness of the above values is, in part, corroborated by the results of experimental and theoretical investigations reported in the literature to estimate self-diffusion of some metals under microgravity (Itami, et al., 2000). According to this report, the diffusion coefficients for lead (Pb), germanium (Ge), tin (Sn), and silicon (Si) vary from approximately 10^{-8} to 10^{-9} m^2/s at much higher ranges of temperatures (e.g., 400° to 1,700° K) than those expected in the field. The diffusion coefficients at lower temperatures are expected to be lower than these values.

B.3 Dispersion Coefficient

For comparison with the above values of diffusion coefficients, estimated values of longitudinal, transverse, and vertical dispersion coefficients for the Site conditions are indicated in Tables B-1a and B-1b. The values of parameters used to estimate the dispersion coefficients are also shown in these tables and are taken from Section 4.0.

Table B-1a. Estimated Dispersion Coefficients for Cell 6

For Cell 6, hydraulic gradient (i) = 0.00056; effective porosity (φ) = 0.30; longitudinal dispersivity (α_x) = 14.9 m; transverse dispersivity (α_y) = 4.97 m; and vertical dispersivity (α_z) = 0.83 m.

Parameter	Maximum	Average	Minimum
Hydraulic Conductivity (K) (m/yr)	7001.0	5171.9	3626.6
Longitudinal dispersion coefficient[a] (m^2/yr)	194.7	143.8	100.9
Transverse dispersion coefficient[a] (m^2/yr)	64.9	48.0	33.6
Vertical dispersion coefficient[a] (m^2/yr)	10.8	8.0	5.6

[a]Longitudinal dispersion coefficient = $K\, i\, \alpha_x / \varphi$, Transverse dispersion coefficient = $K\, i\, \alpha_y / \varphi$, and Vertical dispersion coefficient = $K\, i\, \alpha_z / \varphi$,

Table B-1b. Estimated Dispersion Coefficients for Cell 1

For Cell 1, hydraulic gradient (i) = 0.00056; effective porosity (φ) = 0.30; longitudinal dispersivity (α_x) = 17.65 m; transverse dispersivity (α_y) = 5.88 m; and vertical dispersivity (α_z) = 0.988 m.

Parameter	Maximum	Average	Minimum
Hydraulic Conductivity (K) (m/yr)	7001.0	5171.9	3626.6
Longitudinal dispersion coefficient[a] (m^2/yr)	230.6	170.4	119.5
Transverse dispersion coefficient[a] (m^2/yr)	76.8	56.8	39.8
Vertical dispersion coefficient[a] (m^2/yr)	12.9	9.5	6.7

[a]Longitudinal dispersion coefficient = $K\, i\, \alpha_x / \varphi$, Transverse dispersion coefficient = $K\, i\, \alpha_y / \varphi$, and Vertical dispersion coefficient = $K\, i\, \alpha_z / \varphi$,

The above values evidence that the dispersion coefficients are approximately 2 to 4 orders of magnitude greater than the expected diffusion coefficient for uranium. Therefore, the contribution of diffusion is not incorporated in the analysis.

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APPENDIX C

EVALUATION OF APPLICABLE GROUND WATER TRANSPORT MODELS

C.1 CRITERIA FOR MODEL SELECTION

The criteria used for selecting an appropriate ground water transport model for the analysis are:

- The model must be relatively simple. It should preferably be available in the public domain and should have a history of use by more than one entity;
- The model should be capable of simulating the relevant physical processes listed in Section 2.1, particularly in a predictive mode;
- The model should use a conservative approach for simulating the above-mentioned processes; and
- The details of the required model input should be commensurate with available site-specific data, current knowledge of site conditions, and expected time-frame of analysis for the transport of dissolved U-238.

C.2 MODELS CONSIDERED

The relevant processes listed in Subsection 2.1 can be modeled using several different approaches. Steady state and non-steady state models (approaches), which may be relevant in this study with appropriate assumptions, are described in the following paragraphs. A non-steady state model predicts contaminant concentrations at different time periods. A steady state model predicts concentrations with no reference to time (i.e., the simulated transport conditions do not vary with time).

a. A **Rapid Assessment Nomograph** developed by USEPA based upon a simple analytical solution of the advective-dispersion equation for ground water transport (USEPA, 1983). This non-steady state model assumes one-dimensional flow, one-dimensional (i.e., longitudinal) dispersion, and a continuous constant concentration point source. It accounts for retardation and biodegradation during transport through saturated soils but does not account for recharge along the flow path, decreasing source concentrations, and dilution due to lateral and vertical dispersion.

b. **USEPA Analytical model** based on an equation included in USEPA (1985). This non-steady-state model assumes one-dimensional flow, one-dimensional (i.e., longitudinal) dispersion, and a diminishing point source. It accounts for retardation and biodegradation during transport through saturated soils but does not account for recharge along the flow path and dilution due to lateral and vertical dispersion.

c. **Model based on the Domenico equations** (e.g., IPCB, 2004; Domenico, 1987; Domenico and Robbins, 1985; and ASTM, 1995). The steady and non-steady state versions of this model assume one-dimensional flow, three-dimensional dispersion, and a continuous vertical plane source with constant concentration. It can account for retardation and biodegradation during transport through saturated soils but does not account for recharge along the flow path nor for reduction in source concentration due to rainwater infiltration.

d. **Natural Attenuation Decision Support System, BIOCHLOR** (USEPA, 2000). This model is based on modified Domenico equations (Domenico, 1987; Domenico and Robbins, 1985) and simulates one-dimensional advection, three-dimensional dispersion, linear adsorption, and biotransformation. Just like the Domenico equations, this model also assumes a fully penetrating, vertical plane source oriented perpendicular to ground water flow. It can account for source reduction but does not account for recharge along the flow path.

e. **Analytical Transient One-, Two-, and Three-Dimensional Model, AT123D** (Yeh, 1981). This model is a collection of analytical solutions for one-, two-, and three-dimensional contaminant transport with advection, dispersion, and source reduction. A uniform flow field with constant velocity is assumed. It is applicable to the transport of radioactive waste, heat, and chemicals from linear, areal, or volumetric sources with instantaneous, finite-time, or continuous release. The model does not account for recharge along the flow path. According to some reviews, numerical errors may occur during calculation of the series summation which means convergence and accuracy may not be guaranteed (e.g., Maidment, 1993).

f. **Multimedia Exposure Assessment Model, MULTIMED** (USEPA, 1996) for saturated and unsaturated zone fate and transport of dissolved chemicals. This model can simulate both steady and non-steady state transport. It assumes one-dimensional flow, three-dimensional dispersion, and can simulate contaminant transport emanating from a continuous or finite-duration, non-decaying patch type or decaying or non-decaying Gaussian source. It accounts for retardation, biodegradation, and recharge along the flow path during transport through saturated soils.

g. **Coupled and uncoupled two- and three-dimensional finite-difference or finite-element flow and transport models.** There are a number of complex and sophisticated models in this category. A few examples include:
   - The MT3D (USEPA, 1992) model coupled with the MODFLOW model (USGS, 2000);
   - USGS MOC model (Konikow and Bredehoeft, 1978; Goode and Konikow, 1989);
   - SEFTRAN model (Geotrans, Inc., 1988);
   - CFEST model (Gupta, et al., 1987);
   - FTWORK model (Faust, et al, 1989);
   - HST3D model (Kipp, 1987);
   - SUTRA model (Voss, 1984; Souza, 1987);
   - SWIFT II model (Reeves et al., 1986); and
   - TARGET model (Sharma et al., 1981).

These models can simulate two- and three-dimensional flow and transport under steady or non-steady state conditions. The model domain boundaries have to be defined based on existing natural and man-made surface and ground water flow and transport conditions in the site vicinity. To minimize boundary effects, the model domain has to include an area much larger than the site area. Appropriate hydraulic head, flow, and concentration conditions have to be provided at these boundaries and verified during calibration. The model domain is divided into variable size discrete elements or cells and layers. Site-specific hydrogeologic and chemical data have to be available or estimated for each of the discrete elements or cells. A relatively large amount of field data is required for model calibration. The larger the number of input parameters, the more difficult it is to obtain adequate and reliable information for them. Therefore, several assumptions may have to be made or default values may have to be used based on the judgment of the user.

C.3 COMPARATIVE EVALUATION

Each model has its own assumptions and limitations and may require adaptations and additional simplifying assumptions to simulate specific site situations. The more sophisticated models (coupled or decoupled two- and three-dimensional flow and transport models) require more data on site-specific parameters for calibration and simulation.

U-238 contamination at different concentrations has been detected at different depths in the ground water profiles and monitoring wells drilled and investigated at the Site. There is considerable variation in measured U-238 concentrations. In addition, the concentrations at different locations and depths include different and indeterminate degrees of dilution due to mixing with ambient ground water flow. Thus, reliable data for the calibration or "benchmarking" of the uranium transport model are not available. Without adequate calibration, the results of the sophisticated models may not have a higher degree of accuracy.

Regardless of model used, one of the significant model input parameters is the concentration of U-238 at the source. This parameter has to be estimated outside the above-mentioned models and will not be affected by the sophistication or simplicity of the selected transport model. In addition, the time horizon for the transport of U-238 is fairly large (approximately several decades to several hundred years or so), so a number of simplifying and conservative assumptions have to be made to evaluate the potential for ground water contamination at the point of interest at some time in the distant future regardless of the model selected. However, when a relatively large number of assumed input parameters are required for a model, there is a possibility that more than one combination of input parameters may provide similar results (or that the model over or under predicts transport). In such cases, without the ability to properly calibrate a model, it may be difficult to distinguish between realistic and spurious results.

Of the analytical models listed in Section C.2 (a, b, c, d, e, and f), only MULTIMED (USEPA, 1996) has the capability to simulate dilution due to recharge along the path of ground water transport.

The afore-mentioned finite-difference and finite-element models may provide ground water flow (advection) in three directions. Because three-dimensional advection may result in more dilution, using a three-dimensional model may predict relatively lower concentrations reaching the point of interest. Consequently, the predicted concentrations may not be conservative when compared to the case in which ground water flow is assumed to have only one dominant flow direction. This is true for each of the more sophisticated models.

References: See Appendix D References.

APPENDIX D

DESCRIPTION OF MULTIMED MODEL

The Multimedia Exposure Assessment Model (MULTIMED) simulates the movement of contaminants leaching from a waste disposal facility or contaminated soils. The model consists of a number of modules which predict concentrations at a receptor due to transport in both unsaturated and saturated soil zones. The output from the unsaturated zone module may be used to couple the unsaturated zone transport module with the steady-state or transient, semi-analytical saturated zone transport module. The saturated zone transport module includes one-dimensional uniform flow, three-dimensional dispersion, linear adsorption, first-order decay, and dilution due to direct infiltration into the ground water plume. The unsaturated zone module of MULTIMED is not relevant in this analysis because the prior excavation activities removed upper levels of soil and left residual soils relevant to this analysis that have been characterized to approximately 5 to 10 ft above the water table.

The fate of contaminants in various media depends on the chemical properties of the contaminants as well as a number of media- and environment-specific parameters. The uncertainty in these parameters can be quantified in MULTIMED using the Monte Carlo simulation technique. To enhance the user-friendly nature of MULTIMED, a preprocessor, PREMED, and a postprocessor, POSTMED, have been developed.

The operation of each module requires specific input, which is organized into data groups. The General Data Group, which is required for all simulations, contains flags and data which describe the scenario being modeled. The input parameters needed for the Saturated Zone Transport Model are arranged in three additional data groups: the Chemical Data Group, the Source Data Group, and the Aquifer Data Group.

The simplifying assumptions required to obtain the analytical solutions for the equations used in MULTIMED limit the complexity of the systems that can be modeled. Accordingly, MULTIMED cannot be used to account for site-specific spatial variability or boundary conditions, landfill shape, multiple aquifers and pumping wells, flow in fractures, or chemical reactions between reactants. As a result, MULTIMED should be used only as a screening level tool when applied to complex sites.

MULTIMED was developed primarily for, and has seen extensive application in, predicting leachate movement from a Subtitle D (hazardous waste) landfill. This type of application, however, only utilizes a subset of MULTIMED's full capabilities. When MULTIMED has been used in conjunction with a separate source model, such as HELP (USEPA, 1995), it has been applied to a much larger range of scenarios. Such scenarios may include development and comparison of the effects of different facility designs or conditions on ground water quality to address questions related to appropriate cleanup levels for contaminated soils.

The MULTIMED model has undergone a series of tests to verify the correctness of the model. Discussion of these tests and related model application considerations are included in the model documentation (USEPA, 1996). The model can simulate steady and non-steady state transport of conservative or decaying substances emanating from a rectangular (patch type) or Gaussian source with specified leach rates. The source may be a constant concentration source or a decaying source.

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APPENDIX E

U-238 TRANSPORT ASSUMING PAVED CELL SURFACE

E.1 Introduction

It is likely that the area occupied by subcell series U in Cell 6 and Cell 1 may be paved or occupied by buildings at some point in future. If the area occupied by subcell series U in Cell 6 and Cell 1 is paved, it would significantly reduce infiltration of rainwater through the residual soils containing U-238. Thus the quantity and rate of desorption of U-238 from the residual soils would also be reduced. As a result, the volumetric rate and concentration of U-238 entering the water table would be significantly reduced.

To illustrate the effect of paved surface of subcell series U in Cell 6 and Cell 1, an additional scenario is simulated with relatively more conservative values of model parameters. This scenario is designated as Scenario E-1. The result of this postulated case is presented in this Appendix.

E.2 Model Parameters

The model parameters for Scenario E-1 are shown in Table E-1. The K_{du} value is assumed to be the lowest of the six samples mentioned in Subsection 4.1.1 for the unsaturated zone and the K_d value is taken to be the lowest of the seven samples for the saturated zone. In addition, the hydraulic conductivity is assumed to be the highest of the three samples mentioned in Subsection 4.1.3. The infiltration for paved surfaces is taken to be 0.006 m/yr (see Subsection 4.7.3).

Table E-1. Input Model Parameters for Scenario E-1- Paved Surface of Subcells

Effective soil porosity (saturated conditions) (φ)	0.30
Water-filled soil porosity (unsaturated conditions) (φ_w)	0.18
Soil bulk density (ρ_b)	1.60 g/cc
Hydraulic conductivity (maximum of measured values) (K)	7001 m/yr (62.9 ft/day)
Average hydraulic gradient (i)	0.00056
Average recharge rate (along path of ground water transport) (q)	0.59 m/yr (23.2 in/yr) (see Table 4-2)
Average infiltration rate (in the paved area occupied by subcell series U in Cell 6 and Cell 1) (I)	0.006 m/yr (0.24 in/yr) (see Table 4-3)
Effective aquifer thickness (B)	9.14 m (30 ft)
Distribution coefficient for unsaturated zone (Minimum of relevant measured values) (K_{du})	2.98 ml/g
Distribution coefficient for saturated zone (Minimum of relevant measured values) (K_d)	0.52 ml/g
Retardation factor in saturated zone (Eq. 3, Subsection 2.3..3) (R)	3.77
Radioactive decay constant for U-238 (λ)	1.55E-10 yr^{-1}
Source depletion coefficient	0.0 yr^{-1}
Distance from downgradient edge of subcell U11 in Cell 6 and U07 in Cell 1 to downgradient point on southern Site boundary (x)	149 m (490 ft) Cell 6; 176.5 m (579 ft) Cell 1
Longitudinal dispersivity (α_x)	14.9 m (49 ft) Cell 6; 17.65 m (57.9 ft) Cell 1
Transverse dispersivity (α_y)	4.97 m (16.3 ft) Cell 6; 5.88 m (19.3 ft) Cell 1
Vertical dispersivity (α_z)	0.83 m (2.74 ft) Cell 6; 0.988 m (3.24 ft) Cell 1
Length of series U subcells in Cell 6 or Cell 1 (L)	27.5 m (90 ft)
Width of series U subcells in Cell 6 or Cell 1 (W)	6.1 m (20 ft)
Initial concentration of U-238 in soils (C_s)	8.87 pCi/g in Cell 6 and 13.79 pCi/g in Cell 1
Concentration of U-238 in rainwater entering the saturated zone (Eq. 2, Subsection 2.3.2) (C_i)	2,868 pCi/L (or 2.9 pCi/mL) in Cell 6 and 4,459 pCi/L (or 4.4 pCi/mL) in Cell 1

E.3 Results of Simulations with Paved Subcells

The predicted maximum U-238 concentrations at the southern Site boundary for the relatively more conservative model parameters included in Table E-1 is 0.27 pCi/L if the area occupied by subcell series U in Cell 6 and Cell 1 is paved. The maximum concentration for Scenario E-1 occurs after 150 years from the initiation of the transport process.

If the area occupied by series U subcells in Cell 6 and Cell 1 is occupied by buildings, then rainwater infiltration, desorption of U-238 from soils in the vadose zone, and vertical transport of U-238 to the saturated zone would be reduced to a minimum. In this case predicted concentration of U-238 in ground water reaching the southern Site boundary would be even smaller than the above value of 0.27 pCi/Ls.

APPENDIX F

BORING LOGS

APPENDIX G

HYDRAULIC GRADIENT AND LENGTH OF FLOW PATH

G.1 Introduction

The MULTIMED model is based on one-dimensional ground water flow and predicts the propagation of concentration along a vertical profile of the aquifer downgradient from the source. This profile follows a straight line along the uni-directional flow path specified as input to the model. The localized hydraulic gradient of ground water along the above-mentioned vertical profile in unconfined situations is the slope of the water table between two selected points or between points closest to these two points on this vertical profile. Thus, the localized hydraulic gradient applicable to the transport of dissolved uranium from subcell series U of Cell 6 and Cell 1 to the point of interest has to be estimated by the difference in ground water levels in the monitoring wells closest to the downgradient edges of subcell series U of Cell 6 and Cell 1 and the point of interest.

The dominant on-Site localized ground water flow direction and localized hydraulic gradient were identified from available field data. While the regional ground water flow direction in the vicinity of the Site is to the south, small areas may have localized variation. This localized variation is relevant for ground water transport modeling within the short transport distance considered in this study (USEPA, 1985, Page 346).

To estimate the localized hydraulic gradient between Cell 6 and Cell 1 and the southern Site boundary, ground water elevations were used from three on-Site monitoring wells (MW-07, MW-11, and MW-09) for two monitoring events (December 2002 and March 2003). The localized hydraulic gradient was taken to be the average of values computed for the above two monitoring events. MW-07 is located downgradient of Cell 6 and Cell 1 and MW-09 and MW-11 are located further downgradient near the southern Site boundary (see Figure 3). These three monitoring wells were selected because they define the plane representing the water table in the area between Cell 6 or Cell 1 and the southern Site boundary (USEPA, 1998; IPCB, 2004).

Relevant data for monitoring wells MW-07, MW-11, and MW-09 are included in Table G-1.

Table G-1. Relevant Data for Selected on-Site Monitoring Wells

Monitoring Well	Screen Interval (ft)	Relative Coordinates[a] (ft)		Ground Water Elevation (ft)	
		x	y	March 2003	December 2002
MW-09	72-82	0	0	68.80	67.90
MW-11	71-81	110	0	68.84	67.91
MW-07	69.5-79.5	330.46	317.11	68.98	68.16

[a]Based on distances scaled from Site map (1 inch = 80 ft). (MW-09 to MW-11 = 110 ft; MW-09 to MW-07 = 458 ft; and MW-11 to MW-07 = 390 ft).

G.2 Estimation of Localized Hydraulic Gradient

Three different approaches were used to estimate the localized hydraulic gradient using ground water elevation data for the three monitoring wells included in Table G-1.

G.2.1 Hydraulic Gradient Estimation Using Average Ground Water Elevations

In this approach hydraulic gradient is estimated between monitoring well MW-07 and the point between monitoring wells MW-9 and MW-11 where ground water elevation is equal to the average of ground water elevations in these two wells. The distance of this point from MW-07 is approximately 420 ft.

The estimated hydraulic gradients for the March 2003 and December 2002 ground water elevations are 0.00038 and 0.00061, respectively. This gives an average hydraulic gradient of 0.00049 toward the southern Site boundary.

G.2.2 Hydraulic Gradient based on Potentiometric Contours

In this case ground water contours were sketched for each of the two monitoring events (March 2003 and December 2002). The estimated average ground water gradients from these contours for March 2003 and December 2002 are 0.00054 and 0.00068, respectively. This gives an average hydraulic gradient of 0.00054.

G.2.3 Estimation of Slope of Water Table

This approach uses a matrix solver to develop the equation of a plane through the measured ground water elevations in the three monitoring wells in March 2003 and December 2002, respectively. Each plane represents the plane of water table in the vicinity for that particular monitoring event (March 2003 and December 2002). The slope of this plane with respect to the horizontal plane gives the hydraulic gradient (Devlin, 2002).

According to this method, the estimated hydraulic gradients for the March 2003 and December 2002 ground water elevations are 0.00041 and 0.00071, respectively. This gives an average hydraulic gradient of 0.00056 toward the southern Site boundary.

G.3 Adopted Localized Hydraulic Gradient and Length of Flow Path

So far as the transport of U-238 is concerned, the three estimates of hydraulic gradient included in Subsections G.2.1, G.2.2, and G.2.3 are not significantly different. The highest value of 0.00056 is adopted for ground water transport modeling.

Scaling from a Site map (scale 1 inch = 80 ft), the length of the flow path from the downgradient edge of subcell U11 of Cell 6 to the southern Site boundary along the direction of the above hydraulic gradient is approximated to be 490 ft (149 m). The length of the flow path from the downgradient edge of subcell U07 of Cell 1 to the southern Site boundary along the direction of the above hydraulic gradient is approximated to be 579 ft (176.5 m).

Reference - Appendix G

Devlin, J.F., 2002. A Spreadsheet Method of Estimating Best-Fit Hydraulic Gradients Using Head Data from Multiple Wells, Ground Water, Vol. 41, No. 3, 316-320.

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U.S. Environmental Protection Agency (USEPA), 1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water-Part II, EPA/600/6-85/002b, September 1985, Environmental Research Laboratory, Athens, GA.

U.S. Environmental Protection Agency (USEPA), 1998. USEPA Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water 1998, EPA/600/R-98/128, September 1998, Office of Research and Development, Washington, D.C.

APPENDIX H

VOLUME AND MASS CALCULATIONS FOR RESIDUAL SOILS

Since series U subcells in Cell 1 are located immediately upgradient of series U subcells in Cell 6, U-238 concentrations in residual soils in both Cell 6 and Cell 1 are considered. Volume and mass calculations for both cells are included in the following tables.

VOLUME AND MASS CALCULATIONS FOR RESIDUAL SOILS IN CELL 6

Calculations constrained to the area below the excavation level and above the water table for each subcell
Cell 6 includes subcells Q06 to Q11; R06 to R11; and U08 to U11
All input sample data is from the on-Site gamma spectroscopy service.
Water table is approximated at 71 ft elevation, and is assumed constant throughout Cell 6
* All values were calculated at the 0 (zero) isolevel for U-238
U-238 mass calculation is based on a specific activity of 3.3601 E-7 Ci/g

Subcell	Excavation Depth (ft)	Surface Elevation (ft)	Excavation Elevation (ft)	Soil Volume* (cubic ft)	Soil Mass* (kilograms)	U-238 Mass* (kilograms)	Average U-238* (pCi/g)	Center of Mass* (Elevation in ft MSL)
Q06	32.03	145.46	113.43	18,180	832,150	10.73	4.33	90.5
R06	39.4	145.38	105.98	24,949	1,142,000	38.03	11.18	86.7
Q07	36.47	145.56	109.09	16,241	743,400	11.83	5.34	90.3
R07	40.63	145.1	104.47	21,619	989,550	26.59	9.02	89.5
Q08	27.35	145.39	118.04	19,873	909,640	14.24	5.25	97.2
R08	34.24	145.09	110.85	22,954	1,050,700	34.13	10.9	91.8
U08	32.61	144.78	112.17	16,960	776,320	19.09	8.25	92.4
Q09	18.04	145.02	126.98	23,255	1,064,400	17.4	5.48	99.5
R09	24.8	144.71	119.91	25,078	1,147,900	41.23	12.05	97
U09	24.96	144.69	119.73	20,398	933,680	35.52	12.76	100.5
Q10	7.67	145.5	137.83	27,624	1,264,400	19.12	5.07	104.5
R10	9.27	144.55	135.28	28,956	1,325,400	27.68	7.01	99.1
U10	16.71	145.25	128.54	23,800	1,089,400	32.31	9.95	98.9
Q11	4.9	145.23	140.33	28,776	1,317,200	12.69	3.23	107.8
R11	4.63	145.01	140.38	26,517	1,213,700	12.86	3.55	105.7
U11	16.67	144.67	128	23,621	1,081,200	15.71	4.88	99.7

VOLUME AND MASS CALCULATIONS FOR RESIDUAL SOILS IN CELL 1

Subcell	Excavation Depth (ft)	Surface Elevation (ft)	Excavation Elevation (ft)	Soil Volume* (cubic ft)	Soil Mass* (kilograms)	U-238 Mass* (kilograms)	Average U-238* (pCi/g)	Center of Mass* (Elevation in ft MSL)
U04	13.65	145.63	131.98	25,403	1,162,800	21.63	6.24	101.8
V04	14.88	145.70	130.82	25,710	1,176,800	29.97	8.55	102.1
W04	12.76	145.46	132.70	25,912	1,186,100	28.60	8.09	100.1
U05	23.32	145.17	121.85	20,796	951,900	57.61	20.31	96.4
V05	18.68	145.26	126.58	23,534	1,077,200	75.20	23.43	98.8
W05	14.60	145.76	131.16	25,684	1,175,600	34.40	9.82	104.2
U06	40.13	145.01	104.88	14,174	648,770	33.82	17.49	87.8
V06	17.40	144.71	127.31	24,057	1,101,100	97.18	29.62	96.2
W06	18.03	145.76	127.73	24,125	1,104,300	36.55	11.11	96.5
U07	39.48	145.05	105.57	14,214	650,610	27.29	14.08	89.2
V07	17.27	144.62	127.35	23,619	1,081,100	33.95	10.54	94.9
W07	18.43	145.28	126.85	23,497	1,075,500	19.46	6.07	96.2

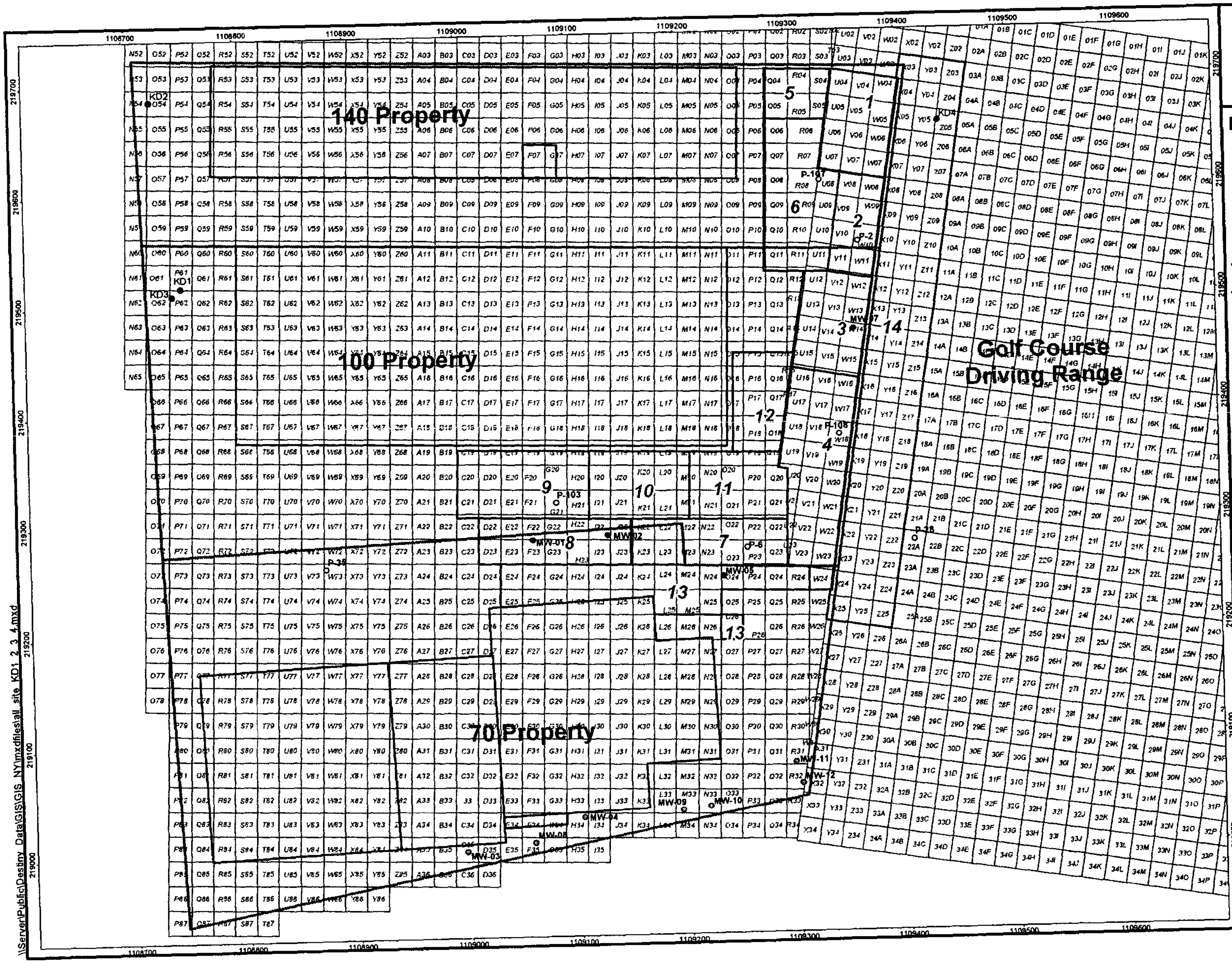

Figure 3
Location of Referenced Monitoring Wells, Profiles, and Borings

Legend

- Monitoring Wells (Existing)
- Monitoring Wells (Abandoned)
- Profile Locations
- KD1, KD2, KD3, KD4 Boring Locations
- Building
- Property Line
- Subcell Boundary
- Cell Boundaries

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DRI ID: 1006.H6786

November 6, 2006

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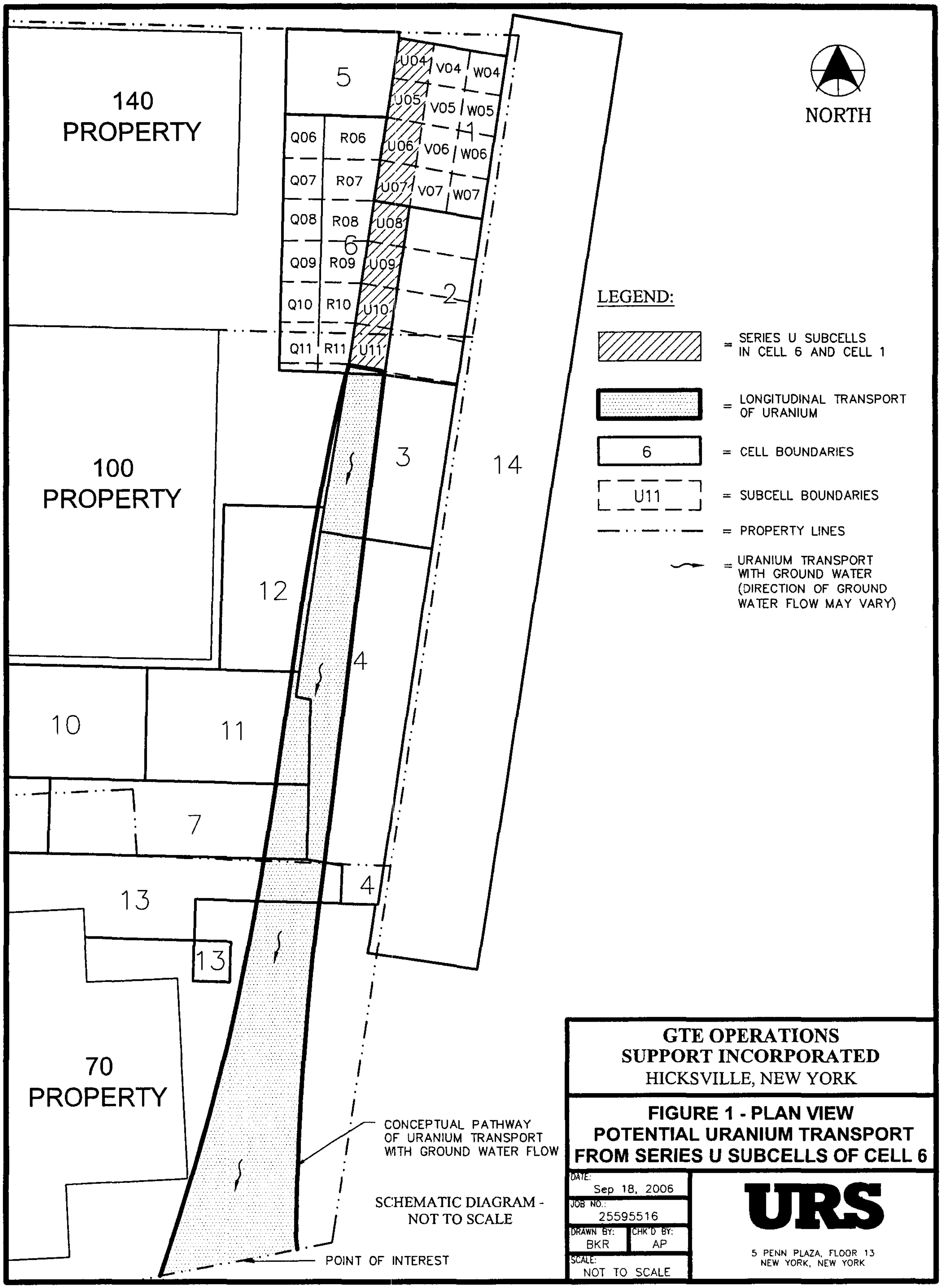

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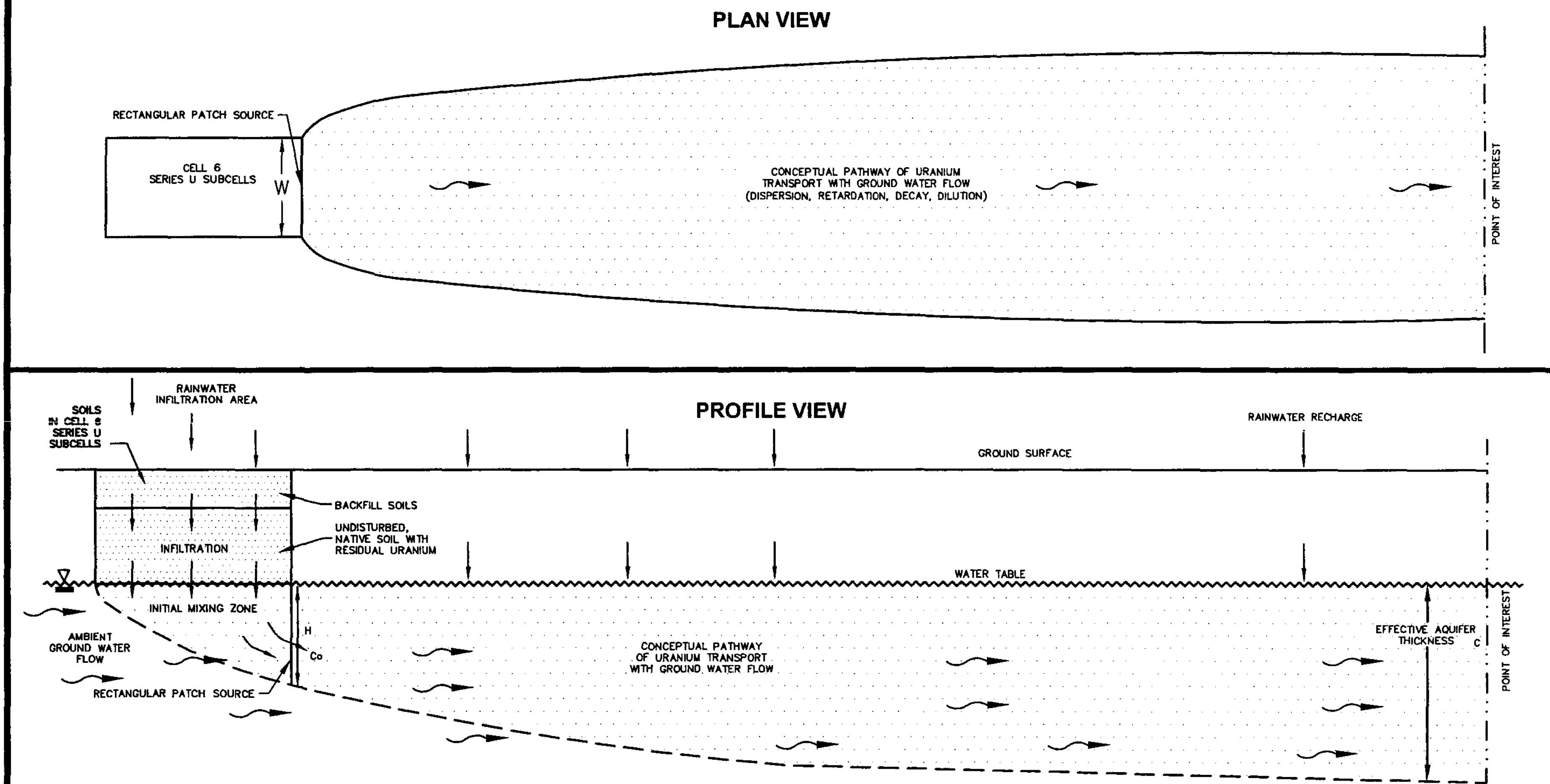
FIGURE 1 - PLAN VIEW POTENTIAL URANIUM TRANSPORT FROM SERIES U SUBCELLS OF CELL 6

DATE: Sep 18, 2006	URS
JOB NO.: 25595516	
DRAWN BY: BKR	CHK'D BY: AP
SCALE: NOT TO SCALE	5 PENN PLAZA, FLOOR 13 NEW YORK, NEW YORK

Q:\GTE Hicksville, NY\Figures\Autocad Drawings\25595516 - GTE OPERATIONS NY\Cell 06 - U04-U11 Uranium Transport (3).dwg



NOTES:

Co = POTENTIAL URANIUM CONCENTRATION IN GROUND WATER AT SOURCE

C = POTENTIAL URANIUM CONCENTRATION AT POINT OF INTEREST

H = MIXING ZONE DEPTH

W = WIDTH OF SOURCE

SCHEMATIC DIAGRAM -
NOT TO SCALE

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**FIGURE 2 - CROSS-SECTIONAL VIEW
POTENTIAL URANIUM TRANSPORT
FROM SERIES U SUBCELLS OF CELL 6**

DATE: OCT. 6, 2006
JOB NO.: 25595516
DRAWN BY: BKR
CHK'D BY: AP
SCALE: NOT TO SCALE

URS
5 PENN PLAZA, FLOOR 13
NEW YORK, NEW YORK

Appendix F – Boring Logs

This appendix provides the boring log for the Potential Uranium Transport Report. Boring logs are provided in sequential order, KD1 through KD4. Borings KD1 and KD3 were advanced using a hollow-stem auger drilling rig; Borings KD2 and KD4 were advanced using hollow-stem augers to 69 feet below ground surface, then casing was advanced with a 300-pound hammer to the bottom of the boring. The borings were backfilled with clean fill upon completion.

The main lithologic name with the appropriate group symbol is described at the top of each stratum. The main lithologic group is in capital letters and bold font. Minor variations within the soil stratum are called out at the approximate elevation in which they occur, and the main lithologic group is not repeated nor any variations above the one identified.

Fill is defined as non-native material (evidenced by color, texture, structure, or miscellaneous debris), other than the material GTEOSI used to backfill excavations, which is noted as 'backfill' in the logs.

MAJOR DIVISIONS			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

SOIL CLASSIFICATION CHART

MATERIAL SIZE	PARTICLE SIZE			
	LOWER LIMIT		UPPER LIMIT	
	MILLIMETERS	SIEVE SIZE*	MILLIMETERS	SIEVE SIZE*
SAND				
FINE	.074	#200*	0.42	#40*
MEDIUM	0.42	#40*	2.00	#10*
COARSE	2.00	#10*	4.76	#4*
GRAVEL				
FINE	4.76	#4*	19.1	3/4"•
COARSE	19.1	3/4"•	76.2	3"•
COBBLES	76.2	3"•	304.8	12•
BOULDERS	304.8	12•	914.4	36"

*U.S. STANDARD •CLEAR SQUARE OPENINGS

GRADATION CHART

Notes:

1. Dual symbols are used to indicate borderline classifications or intermixed strata.

2. Soil descriptions and classification are based on field observations, not on laboratory testing of soil physical properties.

3. When used on the boring logs, the following terms are used to describe the consistency of cohesive soils and the relative compactness of cohesionless soils:

Cohesive Soils	Cohesionless Soils
Very Soft	*Very Loose*
Soft	*Loose*
Medium Stiff	*Medium Dense*
Stiff	*Dense*
Very Stiff	*Very Dense*
Hard	

4. When used on the boring logs, the following terms indicate the volume percentage of the minor soil components estimated in the field based on visual observations:
   trace: 1 to 10% little: 10 to 20% some: 20 to 35% and: 35 to 50%.

5. Moisture Content:
   Dry: Absence of moisture, dusty, dry to the touch
   Moist: Damp but no visible water
   Wet: Visible free water, usually soil is below the water table

UNIFIED SOIL CLASSIFICATION SYSTEM AND KEY TO LOG OF BORINGS

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD1
Date Drilled: 8/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Carrie Olsen

URS
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13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
0								Asphalt Surface elevation at 144.9', first sample at 20'	
1								**FILL**, dark brown, fine to medium sand, trace fine gravel and cobbles, dry (lithology observed from auger cuttings to 20' bgs)	
2									
3									
4								(Fill depth interpreted from adjacent borings) Brown, fine to medium **SAND**, trace coarse sand, fine to coarse gravel and cobbles	
5									
6	SP								
7									
8									
9									
10								Cobble layer	
11									
12									
13									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
14, 15, 16, 17, 18, 19	SP							Brown, fine to medium **SAND**, trace coarse sand, fine to coarse gravel and cobbles	
20, 21	GW		21	12	0.0	10.3	Kd	Light brown, fine to coarse **SAND** and fine to coarse **GRAVEL**, medium dense, dry	
22, 23	GW		30	18	0.0	10.3	Kd	Dense	
24, 25	SP		21	18	0.0	NA		Tan, fine to medium **SAND**, trace fine gravel, dense, dry Medium dense Medium to coarse sand, some fine to coarse gravel	NA = Not available (rad data not recorded)
26									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
27	SW		41	24	0.0	9.0		Light brown, fine to coarse **SAND**, some gravel, dense, moist	
28	SP							Light brown, fine to medium **SAND**, trace fine gravel, dense, moist	
29	SW		26	20	0.0	8.5		Light brown, fine to coarse **SAND**, trace fine to coarse gravel, medium dense, moist	
30	SP							Brown, fine to medium **SAND**, trace fine gravel, medium dense, moist Trace coarse sand	
31			26	21	0.0	10.8	Kd		
32									
33			35	24	0.0	10.8		Light brown to tan, fine sand, trace medium to coarse sand and fine gravel to 34', dense, moist	
34								Medium dense	
35			23	24	0.0	9.0			
36	SW							Light brown, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
37	GP		36	22	0.0	9.3		Tan, fine to coarse sandy, **GRAVEL,** moist	
38	SW							Light brown to tan, fine to coarse **SAND**, trace fine gravel, dense, moist	
39	SP		31	24	1.4	9.1		Tan with reddish mottles, fine **SAND**, trace medium sand and fine gravel, dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
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Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
								Tan with reddish mottle, fine **SAND**, dense, moist Tan, trace clay	
40								Tan to light brown, occasional gravel, medium dense	
41			28	24	0.8	9.0	Kd	Dark brown, clay grades out Tan, occasional fine gravel	
42	SP							Trace gravel	
43			26	24	1.7	9.0			
44								Trace clay Light brown, some clay, medium dense	
45			18	24	0.7	9.1		Light brown, fine sandy, **CLAY**, moist, very stiff	
46	CL							Silty, soft, moist to wet	
47			2	24	0.5	10.1			
48	SC							Light brown, clayey, fine **SAND**, moist, very loose	
49			38	24	6.2	8.1		Light brown to tan, fine to medium **SAND**, trace fine gravel, dense, moist	
50	SP							Trace coarse sand and fine to coarse gravel Trace medium sand, dense, moist	
51			43	24	7.3	9.5	Kd		
52									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
53			48	24	10.2	9.0		Light brown, fine to medium **SAND**, trace fine to coarse gravel, dense, moist 1" orange sandy clay	
54									
55			21	24	2.5	9.0		Tan to light tan, medium sand grades out, medium dense	
56									
57			20	24	1.6	9.0			
58	SP								
59			20	24	0.5	9.0			
60									
61			22	24	1.3	9.4	Kd		
62									
63			23	24	1.2	9.1			
64								Dense	
65			31	24	0.0	10.7			

Project No.: NYSDEC: V-00089-1; URS: 27010-039
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Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
								Tan to light tan, fine **SAND**, dense, moist	
66	CL							Trace bright orange, 1/2" clay seam	
67			37	24	0.5	9.1			
68								Medium dense	
69			26	24	0.9	9.0			
	SP								
70								Dense	
71			33	24	0.0	9.4	Kd		
72									
73			52	24	0.0	9.1		inferred groundwater level	
74								No recovery, wet	
75			5	0	-	-			
76									
				0					
77									NA = Not available (rad data not recorded)
78			18	14	0.0	NA			

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD1
Date Drilled: 8/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
	SP							Tan, fine to medium **SAND**, trace coarse sand and silt, wet	
79				0				No recovery	
80–82	SP		11	20	0.0	NA	Kd	Tan, fine to medium **SAND**, trace coarse sand and silt, medium dense, wet	NA = Not available (PID and rad data not recorded)
82–84	SP		23	22	NA	NA			
84–86	SP		16	10	NA	NA			
86								No samples collected	
87–89	SP		135	12	NA	NA		Tan, fine to medium **SAND**, trace coarse sand and silt, very dense, wet	
89								No samples collected	
90–91	SP		79	22	NA	NA		Tan, fine to medium **SAND**, trace coarse sand and silt, very dense, wet	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD1
Date Drilled: 8/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
	SP							Tan, fine to medium **SAND**, trace coarse sand and silt, very dense, wet	
92								No samples collected	
93								No lithology data recorded	NA = Not available (PID and rad data not recorded)
94			63	10	NA	NA			
95								No samples collected	
96									
97									
98									
99									
100								No recovery	
101			14	0	-	-			
102								No samples collected	
103									
104									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD1
Date Drilled: 8/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Carrie Olsen

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New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
								No samples collected	
105									
106									
107									
108									
109									
110									
111									
112									
113									
114									
115									
116									
117									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD1
Date Drilled: 8/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
118–121								No samples collected	
122–124			65	0	-	-		No recovery	
124–130	EOB							NOTES: 1. Boring completed to a depth of 124' on 8/31/04 2. Groundwater estimated at 74' bgs during drilling 3. Continuous sampling was discontinued from 94.5-120' bgs (flowing sand in auger) 4. Boring backfilled to surface with clean soil on 9/3/04 5. Kd samples included off-Site nickel, off-Site uranium, off-Site thorium, on-Site VOCs, and a sample for the GTE attorneys	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
0–4.5								Asphalt Surface elevation at 145.8', first sample at 20' below reference **FILL**, brown, fine sand, some medium sand, trace coarse sand, fine to coarse gravel, and asphalt debris, dry (lithology observed from auger cuttings to 20' bgs) (Fill depth interpreted from adjacent borings)	
4.5–13	SP							Brown, fine **SAND**, some medium sand, trace coarse sand, fine to coarse gravel, dry	

Depth scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
13–20	SP							Brown, fine **SAND**, some medium sand, trace coarse sand, fine to coarse gravel, dry	
20–22	SW		11	18	0.2	11.1	Kd	Brown, fine to coarse **SAND**, trace fine gravel, medium dense, dry	
22–24	SW		25	32	-	-		Light brown, some to trace gravel	
24–24.5	SP		19	18	-	-	GT	Poorly graded **SAND**	
25–26	SW						Kd	Light brown, fine to coarse **SAND**, some to trace fine gravel, medium dense, dry	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
26–30								No samples collected	
30–32	SP		28	18	0.0	10.4	Kd	Light brown, fine to medium **SAND**, some coarse sand and fine gravel, medium dense, dry Gravel and coarse sand grade out from 31.7-32'	
32–39								No samples collected	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
39–40								No samples collected	
40–42	SP		20	19	0.5	10.3	Kd	Light brown, fine to medium **SAND**, some coarse sand and fine gravel, medium dense, dry Coarse gravel/cobbles at 40.75' Fine sand, some medium sand, trace fine gravel, medium dense, moist	
42–44								No samples collected	
44–45	SP		14	17	-	-	Kd	Light brown, fine **SAND**, some medium sand, trace fine gravel, medium dense, moist	
45–46	SM							Light brown, silty, fine **SAND**, medium dense, moist	
46–48			21	19	-	-	GT	Light brown to tan	
48–50								No samples collected	
50–52	SP		27	22	0.4	10.5	Kd	Brown, fine to medium **SAND**, trace coarse sand and fine gravel, medium dense, moist Tan, fine sand, coarse sand and gravel grade out, occasional clay balls	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
52–60								No samples collected	
60–62	SP		20	13	0.2	10.4		Tan, fine **SAND**, intermittent clay, medium dense, moist	
62–65								No samples collected	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
65–69								No samples collected	
69–71	SP		27	24	0.6	NA	Kd	Tan, fine **SAND**, medium dense, moist	
71–73	SP		46	24	-	-	GT	Tan to light brown, fine to medium sand, trace silt, dense, moist	
73–78	▼ (74)							No samples collected inferred groundwater level	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
79–80			69	0	-	-		No recovery	
81–82								No samples collected	
83–84			46	0	-	-		No recovery	
85–87								No samples collected	
88–89			-	0	-	-		No recovery (piston sample attempt)	
90–91								No samples collected	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
91–94								No samples collected	
94–95								No recovery	
95–98	SM		43	<2	0.0	-	GT	Light brown, silty, fine to medium **SAND**, some coarse sand, wet	
			53	12	0.0	-			
98–99								No samples collected	
99–102	SM		76	4	0.0	-		Light brown, silty, fine to medium **SAND**, some coarse sand, wet	
102–103								No samples collected	
103–104			93	0	-	-		No recovery	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
105–106								No recovery	
106–108								No samples collected	
108–110	SM		51	8	0.0	-		Light brown, silty, fine to medium **SAND**, some coarse sand and fine gravel, wet	
111–112								No samples collected	
113–117	SM		47	12	0.0	-	Kd	Light brown, silty, fine to coarse **SAND**, wet	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD2
Date Drilled: 9/20/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer / Shelby tube / piston sampler
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
118	SM		51	11	0.0	-	Kd	Light brown, silty, fine to coarse **SAND**, wet	
119	EOB							NOTES: 1. Boring completed to 118.9' bgs on 9/23/04 2. Groundwater estimated at 74' bgs during drilling 3. Casing and hollow stem auger removed and boring backfilled with clean soil on 09/24/04 4. Kd samples include off-Site nickel, off-Site uranium, off-site thorium, on-Site VOCs, and GTE attorney samples 5. GT, geotechnical samples; samples analyzed for particle size distribution, hydraulic conductivity, total organic carbon, specific gravity, and percent moisture. The sample at 94.5-98.7' bgs was analyzed for particle size distribution and percent moisture.	
120									
121									
122									
123									
124									
125									
126									
127									
128									
129									
130									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD3
Date Drilled: 9/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
0								Asphalt Surface elevation at 144.9', first sample at 18 ft	
1								**FILL**, brown, fine to coarse sand, some gravel and topsoil to 5' bgs , trace cobbles, moist (lithology observed from auger cuttings to 18' bgs)	
2									
3									
4								(Fill depth interpreted from adjacent borings)	
5								Brown, fine to coarse **SAND**, some gravel, trace cobbles, moist	
6									
7									
8	SW								
9									
10									
11									
12									
13									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD3
Date Drilled: 9/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
13–18	SW							Brown, fine to coarse **SAND**, some gravel, trace cobbles, moist	
18–20	SW		18	20	0.0	9.8		Coarse gravel and cobbles grade out, medium dense, dry	
20–21	SW		18	21	0.0	9.8			
21–21.5	GW						GT	Well graded **GRAVEL**	
21.5–22	SW							Brown, fine to coarse **SAND**, some fine gravel, medium dense, dry	
22–26								No samples collected	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD3
Date Drilled: 9/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
27									
28								Light brown, fine to medium **SAND**, some fine gravel, medium dense, moist	
29			25	24	0.0	9.0			
30	SP								
31			19	22	0.0	9.0	GT		
32								No samples collected	
33									
34									
35									
36									
37									
38									
39									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD3
Date Drilled: 9/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
40–42	SP		25	24	0.0	9.1	GT	Light brown, fine to medium **SAND**, trace fine gravel, medium dense, moist	
42–43								No samples collected	
43–45	SP		18	24	0.0	NA		Light brown, fine to medium **SAND**, medium dense, moist Trace clay, medium sand grades out from 44.8-45'	NA = Not available (rad data not recorded)
45–46.5	SC		11	24	0.0	11.9	Kd GT	Light brown, clayey **SAND**, stiff, moist	
46.5–47	ML							**SILT**	
47–49	SP		71	15	0.0	11.9		Brown, fine **SAND**, trace clay, moist	
49–50								No samples collected	
50–51	SP		29	24	0.0	9.8		Light brown, fine to medium **SAND**, medium dense, moist	
51–51.5	SP-SM						GT	Poorly graded **SAND** and silty **SAND**	
51.5–52	SP							Light brown, fine to medium **SAND**, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD3
Date Drilled: 9/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
52–60								No samples collected	
60–61.5	SP		18	21	0.0	9.7	GT	Tan, fine **SAND**, medium dense, moist	
61.5–62	SP-SM							Poorly graded **SAND** and silty **SAND**	
62–65								No samples collected	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD3
Date Drilled: 9/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
65–70								No samples collected	
70–72 (71)	SP		23	20	0.0	9.1	GT	Tan, fine to medium **SAND**, trace coarse sand, medium dense, moist	
72–74								No samples collected	
74	▼							inferred groundwater level	
75–78									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD3
Date Drilled: 9/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
79								No samples collected	
80								No recovery	
81			21	0	-	-			
82									
83			6	0	-	-			
84									
85			19	0	-	-			
86									
87			33	0	-	-			
88									
89	SP		24	12	-	-	GT	Tan, fine to medium **SAND**, trace coarse sand, medium dense, wet	
90								No recovery	
91									

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD3
Date Drilled: 9/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
			22	12	0.0	9.0		No recovery	
92	SP						Kd	Tan, fine to medium **SAND**, trace coarse sand, medium dense, wet	
93–99								No samples collected	
100–103	SW		20	4	0.0	-		Tan, fine to coarse **SAND**, medium dense, wet	
103–104	SP		22	5	0.0	-		Light brown, fine **SAND**, trace silt, wet	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD3
Date Drilled: 9/1/04
Sampler Type: 3-inch split spoon driven by 300-lb hammer
Logged By: Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
105	SP							Light brown, fine **SAND**, trace silt, medium dense, wet	
106			9	0	-	-		No recovery	
107	EOB								
108–117								NOTES: 1. Boring completed to a depth of 107' on 9/3/04 2. Groundwater estimated at 74' bgs during drilling 3. Boring backfilled to surface with clean soil on 9/3/04 4. Kd samples included off-Site nickel, off-Site uranium, off-site thorium, on-Site VOCs, and sample for the GTE attorneys 5. GT= geotechnical samples; geotechnical samples analyzed for grain size analysis, total organic carbon, specific gravity, and percent moisture. The sample from 100' to 103' bgs was analyzed for total organic carbon.	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD4
Date Drilled: 9/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Aimee Clark, Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
15–20								**BACKFILL** Soil previously excavated to 20' bgs and backfilled Surface elevation at 142', first sample at 20'	
20–21.5	SW		14	14	0.0	-		Dark tan, fine to coarse **SAND**, some fine to coarse gravel, medium dense, moist	
21.5–22.75	SP							Tan, fine to medium **SAND**, medium dense, moist	
22.75–24	SW		25	22	0.1	-	Kd	Tan, fine to coarse **SAND**, medium dense, moist	Lithological observations and field readings limited on geotechnical samples due to their being encased almost entirely in sample tubes. USCS classification of geotechnical samples are based on laboratory results.
24–26	SP		10	20	-	-	GT	Tan, fine to medium **SAND**, medium dense, moist	
26–28								No samples collected	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD4
Date Drilled: 9/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Aimee Clark, Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
29								No samples collected	
30	SP							Tan, fine to medium **SAND**, medium dense, moist Brown, some fine gravel, trace silt	
31	SW		12	18	0.1	-	Kd	Tan, fine to coarse **SAND**, trace fine gravel, medium dense, moist	
32–39								No samples collected	
40–41	SP		18	18	16.9	-	Kd	Tan, fine to medium **SAND**, medium dense, moist	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD4
Date Drilled: 9/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Aimee Clark, Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
42	SP						Kd	Tan, fine to medium **SAND**, medium dense, moist	
43			23	22	-	-	GT		
44–50								No samples collected	
50–51	SP		19	19	0.0	-	Kd	Tan, fine to medium **SAND**, medium dense, moist	
52–54								No samples collected	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD4
Date Drilled: 9/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Aimee Clark, Carrie Olsen

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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
54–60								No samples collected	
60–62	SP		NA	16	0.0	-	Kd	Tan, fine to medium **SAND**, cobbles at 60', moist	NA = Not available (blow counts and/or recovery not recorded)
62–63	SP		NA	NA	-	-			
63–64	SP/SM						GT		The water table depth was measured inside the auger, and is thus higher than the actual water table depth within the formation. The water table at the time of drilling lay below 71 ft bgs, as the sample collected from 69 to 71 ft was moist, not wet.
64–67								No samples collected	
66.5	▼							inferred groundwater level after boring completion	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD4
Date Drilled: 9/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
Logged By: Aimee Clark, Carrie Olsen

URS
5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
67–69								No samples collected	
69–71 (70)	SP		25	24	0.0	-	Kd	Tan, fine to medium **SAND**, trace fine gravel	Borehole advanced from 69 ft to 113 ft bgs using 4-in diameter casing driven by a 300-lb hammer.
71–79								No samples collected	
79–80 (80)			88	0	-	-		No recovery	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
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Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
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5 Penn Plaza
13th Floor
New York, NY 10001

Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
80–81								No recovery	
81–83			130 203					No samples collected	
83–85.75			*					No recovery	* Blow counts >100 per ft for casing from 85.25 to 89.25 ft bgs.
85.75–93								No samples collected	

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
93-96	SP		*63	8	0.0	-	GT	Light brown, fine to medium **SAND**, some silt, wet	The permeability test was not conducted at the 93-96' bgs sample
96-99	SP		*66	12	0.0	-	Kd		*These 3 spoons were each over-driven 1'; the blow counts given are for the 6-18" interva lwithin the larger 3' interval.
99-101.5			75	0	-	-		No recovery	
101.5-104.5			*54	0	-	-			
104.5-106	SM		**48	4	0.0	-	GT	Light brown, silty, fine **SAND**, some medium sand, wet	**This spoon was over-driven 9"; the blow counts are for the 6-18" interval within the larger 3' interval.

Project No.: NYSDEC: V-00089-1; URS: 27010-039
Project: Kd Drilling Program/Lithological Drilling Program
Client: GTEOSI, Hicksville, NY
Log of Boring: KD4
Date Drilled: 9/24/04
Sampler Type: 3-inch/2-inch split spoon driven by 300-lb/140-lb hammer
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URS
5 Penn Plaza
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Depth (feet)	USCS Letter Symbol	USCS Lithologic Symbol	Blows/Foot (center ft only)	Recovery (in per 2-ft interval)	PID Sample Screen (ppm)	NaI 3x3 (kcpm)	Sample Type	Description	Remarks
107	SM						GT	Light brown, silty, fine **SAND**, some medium sand, wet	The permeability test was not conducted at the 104.5-107.3 bgs sample
108			NA					No recovery	
109	SW CL		***	12	0.0	-	Kd	Light brown, fine to coarse **SAND**, trace silt and fine gravel, clay/silt seam at 109.75', wet	***Spoon was rotated into formation in an attempt to increase sample recovery. However, after spoon was rotated down in depth 1 ft, the spoon was sheared off the rods. The sheard spoon was recovered, and the 1-ft interval pf material inside it was used for Kd testing.
110			NA					No recovery	
111 112	SM		NA	8	0.0	-		Light brown, silty, fine to coarse **SAND**, trace fine gravel, wet	
113			NA					No recovery	
114 115			NA	0	-	-			
116 117 118 119								NOTES: 1. Boring completed to 115.5' bgs on 9/30/04 2. Groundwater depth estimated at 74' bgs during drilling 3. Boring backfilled with clean soil on 9/30/04 4. Kd samples included off-Site nickel, off-Site uranium, off-Site thorium, on-Site VOCs, and a sample for the GTE attorneys 5. GT, geotechnical samples; samples analyzed for particle size distribution, hydraulic conductivity, total organic content, specific gravity, and percent moisture.	

ARCHIVED SAMPLE DISPOSAL REPORT

FORMER SYLVANIA ELECTRIC PRODUCTS INCORPORATED FACILITY

HICKSVILLE, NEW YORK

SITE NUMBER V 00089-1

Prepared by
URS Corporation
and
Envirocon, Inc.

For:
GTE Operations Support Incorporated
One Verizon Way VC34W453
Basking Ridge, NJ 07920

August 2007

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APPENDIX

The CD includes a complete electronic copy of this report.

This Archived Sample Disposal Report has been reviewed by URS Corporation – New York, and I am in agreement with the conclusions.

URS Corporation – New York

Robert D. Brathovde, P.E.
Engineer of Record

This Archived Sample Disposal Report has been reviewed by Professional Radiation Consulting, Inc. (PRCI), and I am in agreement with the conclusions.

Professional Radiation Consulting, Inc.

Shane Brightwell, CHP
President

This Archived Sample Disposal Report has been reviewed by Envirocon, Inc. and I am in agreement with the conclusions.

Envirocon, Inc.

Richard Hafner
Radiation Safety Officer

1.0 INTRODUCTION

This report documents the disposal of archived soil and groundwater samples that were previously stored in the GTE Operations Support Incorporated (GTEOSI) building located at 140 Cantiague Rock Road, Hicksville, New York (the "140 Building"). The samples were generated during the investigation and remediation of the property located at 70, 100 and 140 Cantiague Rock Road. Included herein are a summary of field activities associated with the samples disposal operations, a listing of the type and total weight of samples shipped, and copies of shipping manifests and disposal certificates. The radiation survey results associated with the Sea Land® containers used for storage, the 140 Building former archived samples storage area, the Lift Liner™ packaging and temporary storage areas, the sample shipping area, and the post-loading rail spur are filed on Site.

2.0 BACKGROUND

Pursuant to the State Voluntary Clean-up Program, GTEOSI performed an investigation into property located at 140, 100 and 70 Cantiague Rock Road, Hicksville, New York (the "Site"). During the investigation, and subsequent voluntary Phase I remediation, soil and ground water samples were collected and archived in Sea Land® containers located in the eastern portion of the 140 Cantiague Rock Road building warehouse area. The samples were collected primarily for the analysis of radioactivity, volatile organic compounds (VOCs) and metals. To accommodate the project analytical objectives, samples were stored on Site in several ways: two-gallon and five-gallon plastic buckets; plastic Marinellis; glass and plastic jars and vials ranging from 20-milliliter glass vials to 32-ounce plastic jars. The buckets and Marinellis held bulk soils while the soils and ground water samples in the jars and vials were treated or preserved with methanol, nitric acid, hydrochloric acid or sodium hydroxide, as required by the laboratory analytical methods.

Subsequent to completion of the Phase I remediation, the New York State Department of Health (NYSDOH) issued a letter dated July 17, 2006 to Envirocon, Inc. of Missoula, Montana (Envirocon), the Site remediation contractor who holds the New York State Radioactive Materials License Number (3095-4330), requiring that the archived samples be disposed. Based on this letter and with NYSDOH's approval, a disposal program was implemented and the archived samples were shipped on November 7, 2006, and December 4, 2006 to Envirocare of Utah, Inc. (Envirocare) in Clive, Utah for final disposition. The final certificate of disposal was received on August 8, 2007 following treatment (incineration) of the last portion of the waste on August 5, 2007. It should be noted that since the last shipment of excavated soils from the Site in 2004, Envirocare of Utah, Inc. (Envirocare) has changed its name to Energy*Solutions* and shall be referred to as such in this report.

During the Phase I soil remediation program, soils excavated for disposal were placed into Lift Liners™ on Site then transported by flat-bed truck to the rail spur on West John Street, Hicksville, New York. At the rail spur, the Lift Liners™ were loaded into gondola railroad cars for shipment to Energy*Solutions* using proper waste manifesting procedures. These same processes and procedures were utilized for the disposal of the archived samples.

2.1 REGULATORY AUTHORITY

Prior to the investigation and Phase I remediation program, GTEOSI entered into the following agreements with the State. Disposal of the archived samples were performed in general accordance with these agreements. These agreements are listed and described briefly in the following sub-sections.

2.1.1 Voluntary Agreements

GTEOSI entered into two voluntary agreements with New York State Department of Environmental Conservation (NYSDEC). The first Voluntary Agreement (VA) (Index # W1-0844-98-08) was signed on April 7, 1999 and provided for GTEOSI to perform an investigation of the Site. The second, a Voluntary Cleanup Agreement (VCA), Index # W1-0903-01-12, was effective on January 6, 2003, and provided for Site soil remediation. Under this agreement, GTEOSI agreed to set forth a process and implement activities designed to address environmental contamination at the Site.

Under the voluntary agreements, NYSDEC acts cooperatively with NYSDOH and the Nassau County Department of Health (NCDOH) to provide oversight and review of Site remediation operations.

2.1.2 Energy*Solutions* Licenses

Energy*Solutions* is a Nuclear Regulatory Commission (NRC) licensed and regulated private waste disposal facility designed specifically for Class A, low-level radioactive waste in Clive, Utah. Energy*Solutions* disposes of waste material in aboveground disposal cells that are in conformance with specifications created by the United States Department of Energy (USDOE) and the United States Environmental Protection Agency (USEPA) and meet Title 40 of the *Code of Federal Regulations* (CFR) Part 264 and the NRC disposal requirements.

2.1.3 Waste Generator Site Access Permit

The State of Utah authorizes waste generators, waste processors and waste collectors to deliver radioactive wastes to a land disposal facility located within the State of Utah by issuance of a Site Access Permit. Site Access Permit Number 0205001352 was issued for the Energy*Solutions* facility.

2.1.4 Radioactive Materials License

Operations involving radioactive materials at the Site were regulated by the New York State Department of Labor (NYSDOL) (on July 1, 2006, the Radiological Health Unit was transferred to the NYSDOH) under Part 38, "Ionizing Radiation Protection." The Site remediation contractor, Envirocon, has been issued NYSDOL Radioactive Materials License (RML) Number 3095-4330, for radioactive material operations at the Site. Inspectors from NYSDOL regularly reviewed Site operations.

3.0 HEALTH/SAFETY & STANDARD OPERATING PROCEDURES

During the Phase I Remediation, Project Health and Safety (H&S) protocols were designed and implemented at the Site. For the archived sample disposal activities, the Phase I Remediation Project H&S plan was also utilized for the successful completion of this phase of the project.

For the archive sample disposal activities, a Standard Operating Procedure (SOP) was also developed for the performance of external gamma radiation surveys and calibration procedures for radiation instrumentation. A Radiological and Chemical Work Permit (RWP/CWP) was issued prior to start of work. All workers involved with this phase of the project read and signed the RWP/CWP) and were briefed on a daily basis before the start of activities.

4.0 FIELD ACTIVITES SUMMARY

On October 2, 2006, sample disposal operations at the Site commenced. Prior to opening the Sea Land® containers or the sample containers, field monitoring equipment was calibrated and positioned for operation. The monitoring program utilized during archived sample disposal activities is described below.

4.1 MONITORING PROGRAM

As part of the archived sample disposal program, GTEOSI implemented a monitoring program for both radionuclides and VOCs to monitor for potential exceedances of the RWP/CWP action levels.

4.1.1 Community Air Monitoring Program (CAMP)

The Community Air Monitoring Program (CAMP) was implemented during the Phase I remedial activities. The CAMP monitored VOC and particulate emissions and was conducted during intrusive field activities to protect Site workers and the general public from exposure to emissions. As a complement to the CAMP, radioparticulate matter (U-238, U-234, Th-232, and total uranium) monitoring was performed at the CAMP stations to demonstrate compliance with 6 NYCRR Part 380.

With the approval of the NYSDEC, a modified CAMP was implemented during the archived sample disposal activities. CAMP results were recorded on Air Sample Data Sheets placed on file at the Site and at the GTEOSI offices in New Jersey.

A CAMP monitoring station was set up outside and south of the 140 Building near the most westerly roll up door; this location was established to document background conditions. A second monitoring station was positioned east of the background monitoring station at the truck loading dock on the south side of the 140 Building. This is the location where Lift Liners™ were loaded onto a flat-bed truck for transport to the rail spur. Up to three additional monitoring stations were set up inside the 140 Building in the areas where each Lift Liner™ was being loaded. The number of monitoring stations inside the building varied based on the Lift Liners™ loading activities.

Monitoring at each CAMP station included the use of a:

- MiniRAE 2000 – A photoionization detector (PID) used to monitor VOCs; and
- RadECo Sampling Pump – An air pump used to collect samples [at 3.5 cubic feet per minute (ft^3/min)] to be analyzed for radioparticulates.

The PIDs were placed at the monitoring stations daily, prior to the start of the archived sample disposal activities and were retrieved after work stopped for the day. The data was reviewed at the end of each day. Instruments were also monitored periodically throughout the day to ensure that they were operating properly and that action levels were not exceeded.

Radioparticulate sampling was conducted continuously from the beginning of the disposal activities until the time when operations were terminated. Sample filters were collected daily and analyzed with an alpha/beta scintillation counter on Site.

4.1.2 CAMP Monitoring Results

During the performance of the archived samples disposal activities, CAMP stations had no RWP/CWP action level exceedences. These daily measurements of the monitoring stations are filed on Site and at the GTEOSI offices in New Jersey.

4.1.3 Photoionization Detectors (PIDs)

The PIDs were used to monitor airborne VOC concentrations, both for area monitoring and for screening of the atmospheres inside newly opened Sea Land containers and for screening of Lift Liners™. As indicated above, the PIDs that were used were MiniRAE™ 2000 manufactured by RAE Systems Inc.

4.1.3.1 Calibration and Inspection

The three PIDs used in this program (serial numbers 110-006854, 110-007501, and 110-007601) were sent to Pine Environmental Service Inc. for calibration and inspection, prior to being used for the archived sample disposal activities. Signed Calibration and Inspections Forms are filed on Site and at the GTEOSI offices in New Jersey.

4.1.3.2 Daily Calibration and Preoperational Checks

Before the start of the archived sample disposal activities, the PIDs were checked for proper operation. The particulate filters were cleaned or replaced to minimize the build up of dust and debris. A pre-use "fresh-air" calibration was conducted in an area away from the archived sample disposal work area daily (usually in the 140 Building west, front parking lot or in the office area of the 140 Building). The fresh-air calibration set the zero-point for each PID. Subsequently, a span calibration was performed using a vendor-supplied calibration gas. For this activity a 100-part per million (ppm) isobutylene/air mixture was used. This calibration set the 100-ppm reading for the PID. The results of the calibrations and preoperational checks were recorded on the Daily PID Checklist filed on Site and at the GTEOSI offices in New Jersey.

4.1.3.3 Operational Mode

The area-monitoring PIDs were operated in "Survey" mode, which periodically recorded the PID readings. The PID microprocessors recorded: run time, average readings, and peak readings. At the end of the workday, this information was recorded on the Daily Activity Report.

4.1.3.4 Area Monitoring PID

One PID was set up to continuously monitor the breathing-air zone in each work area. A work area was considered to be the area between the Sea Land® container and the Lift Liner™ frame being filled with soil. The workers usually opened the Marinellis inside the Sea Land® container and carried the opened Marinellis to the ready Lift Liners™. The Marinellis contents were then placed into the Lift Liners™. The area between the Sea Land® container and Lift Liners™ was considered to have the highest potential for airborne VOC concentrations, so this is where the area-monitoring PID, as well as the CAMP particulate samplers, were placed.

4.1.3.5 Periodic Monitoring PID

A hand-held PID was taken to the archived sample disposal work area to verify that the RWP/CWP action levels were not exceeded. The results of the periodic monitoring were recorded on the Periodic PID Monitoring Results log sheet filed on Site and at the GTEOSI offices in New Jersey.

4.1.4 RadECo Pump Particulate Sampling and Radioparticulate Analysis

The RadECo pump was calibrated by the manufacturer at their RadECo Incorporated facility in Taftville, CT prior to the commencement of the archived sample disposal activities. Similarly, the Alpha/Beta detector was calibrated by the manufacturer, Ludlum Measurements, Inc., Sweetwater, Texas. The calibration documentation for both was filed on Site and at the GTEOSI offices in New Jersey.

4.1.5 Monitoring Results

The RWP/CWP for the archived sample disposal activities specified a PID action level of 25 ppm (stop work and reevaluation of activities). This action level was only exceeded twice during area monitoring. The first exceedance occurred on October 12, 2006 when a Marinelli containing discolored soils was opened to the atmosphere and the contents emptied into a Lift Liner™. The maximum measured PID reading was 34.4 ppm. The work was stopped immediately, and the workers were asked to leave the work area. As a result of this event, the workers were briefed and instructed not to open containers with moist or discolored soil samples and to place them un-opened in the Lift Liner™. The workers resumed their activities after the work area was cleared. The second exceedance was recorded on October 20, 2006, with a maximum measured PID reading of 40.7 ppm, the work was stopped immediately, and the workers were asked to leave the work area in an attempt to locate the source. No source was found and activities resumed. The likely cause of this temporary exceedance was the high humidity present that day. There were no other recorded occurrences of PID readings that exceeded the RWP/CWP action levels.

The radioparticulate analysis recorded no exceedances.

4.1.6 Radiological Surveys

Surveys of the Lift Liners™ and gondolas were conducted to document compliance with United States Department of Transportation (USDOT) requirements prior to transport. Each Lift Liner™ was prepared for shipment, so that under conditions normally incident to transportation, the radiation level did not exceed 200 millirems per hour (mrem/hr) on the external surface of the package, and the transport index did not exceed 10. In addition, radiological surveys were performed at the rail spur to verify that a release did not occur.

4.1.6.1 Walkover Survey

All Sea Land® containers were surveyed using the 3-inch NaI calibrated to a data logger for radiation and cleared for reuse. The radiation survey of Sea Land® containers was completed on November 2, 2006. Radiation surveys of the 140 Building former sample storage area, Lift Liner™ packaging and temporary storage areas, and sample shipping area were completed on November 8, 2006. Radiological surveys were performed on gondolas prior to use and after loading. Loading operations were monitored on a continuous basis by visual observation and qualitative radiological surveys to verify waste packages were not breached. Finally, the post-loading rail spur radiation clearance survey was completed on November 9, 2006. All areas surveyed had activity levels consistent with background levels. Survey results are filed on Site and at the GTEOSI offices in New Jersey.

5.0 SAMPLE DISPOSAL

Buckets and Marinellis containing soil were opened and emptied into the Lift Liners™. The empty buckets were then cut up and placed in the Lift Liners™. The empty Marinellis were fed into a chipper and the plastic chips were captured in bags; the bags were placed in the Lift Liners™. Some buckets did not come into direct contact with soil samples as they contained Marinellis or other containers with soil. These buckets were scanned and cleared for reuse.

As shown on Table 1, a total of 16 Lift Liners™ (numbers 9226 through 9239, 9247 and 9245) were filled and scanned for radioactivity and VOC vapors in the 140 Building, then loaded onto a flat-bed truck at the 140 Building truck dock and transported to the West John Street rail spur where they were placed in gondola cars for shipment to Energy*Solutions*. The last Lift Liner™ was filled and scanned on October 25, 2006. On November 7, 2006, all 16 filled Lift Liners™ were transported to the rail spur and placed in two gondola cars. The shipment arrived intact at Energy*Solutions* on November 20, 2006. The shipping manifests are in Appendix A and the certificates of disposal are in Appendix B. Disposal for this shipment occurred on December 11, 2006 (gondola 0840-01-0988) and December 19, 2006 (gondola 0840-01-0987).

Vials and jars were placed in seven Lab Pack 55-gallon drums (numbers 9240 through 9246). To prevent breakage, each Lab Pack drum was supplied with an absorbent packing material to place around the vials and jars to provide cushioning. The drums were shipped by truck on December 4, 2006 to Energy*Solutions*, and received at the disposal facility on December 7, 2006. The shipping manifests are in Appendix A and the certificates of disposal are in Appendix B. Disposal for this shipment (0840-07-0001) occurred on March 5, 2007 and the treatment of the byproduct secondary waste (incineration) occurred on August 5, 2007.

Both the Lift Liners™ and the Lab Pack drums were surveyed for radioactivity prior to shipment and all were cleared for shipment. These surveys are recorded on Shipment Survey forms kept on file on Site and at the GTEOSI offices in New Jersey.

As shown on Table 1, a total of 206,620 pounds of soil and ground water samples and associated waste were shipped from the Site in November and December 2006. This included 205,910 pounds in Lift Liners™ and 710 pounds in Lab Pack drums.

5.1 DOCUMENTATION

Documentation was generated for each waste shipment, including the Railcar Inspection Form, Transport Vehicle Release Checklist (a daily checklist for trucks and packages), straight bill of lading, and an NRC 540 and 541 forms for LLRW. A New York Hazardous Waste Manifest was completed for the mixed waste shipment consisting of the seven drums. Copies were provided to the Priority Transport truck driver, and the on-Site shipping files; Energy*Solutions* received the original signed manifest by mail. Electronic files of the NRC 540, 541and New York Hazardous Waste Manifests were sent to Energy*Solutions*.

Upon receipt and acceptance of the shipment, Energy*Solutions* signed the original manifest and mailed a copy of the NRC 540 form to GTEOSI. Similarly, upon placement of the waste into the landfill, the Certificate of Disposal (with the date of disposal) was sent to GTEOSI. Documentation received from Energy*Solutions* was filed with the appropriate manifests on Site. EnergySolutions also sent copies of New York Hazardous Waste Manifests to the States of Utah and New York.

5.2 WASTE TRANSPORTATION

The Lift Liners™ were manifested and loaded onto a flat-bed truck for the 0.5-mile trip to the rail spur located at West John Street. Waste transportation was performed pursuant to the Traffic Control Plan provided in Appendix C of the *Comprehensive Soil Remediation Program Work Plan, Former Sylvania Electric Products Facility, Hicksville, New York,(Revision 5: June 2003)* (URS, et. al. 2003) (Work Plan). At the spur, the Lift Liners™ were loaded into polypropylene-lined steel gondolas and, from there, shipped to Energy*Solutions* for disposal.

6.0 CONCLUSIONS

The disposal activities of the archived samples project at the Site began on October 2, 2006 and were completed on November 7, 2006. During the disposal activities, CAMP stations had no RWP/CWP action level exceedences.

A total of 16 Lift Liners™ were filled and scanned for radioactivity and VOC vapors in the 140 Building, then loaded onto a flat-bed truck at the 140 Building truck dock and transported to the West John Street rail spur where they were placed in gondola cars and shipped to Energy*Solutions*. The radiation level did not exceed 200 millirems per hour (mrem/hr) on the external surface of the package, nor did the VOC vapors exceed the action level set at 25 ppm. The shipment arrived at Energy*Solutions* on November 20, 2006. Appendices A and B. Disposal for this shipment occurred on December 11, 2006 (gondola 0840-01-0988) and December 19, 2006 (gondola 0840-01-0987).

Archived samples vials and jars were placed in seven Lab Pack 55-gallon drums and shipped by truck on December 4, 2006 to Energy*Solutions*. Prior to shipment, the drums were scanned for radioactivity and VOCs and were cleared for shipment. Energy*Solutions* received the drums at the disposal facility on December 7, 2006. Disposal for this shipment (0840-07-0001) occurred on March 5, 2007 and the treatment of the byproduct secondary waste (incineration) occurred on August 5, 2007.

Table 1: Former Sylvania Electric Products Incorporated Facility, Hicksville, New York Archived Samples Shipment Totals

Item Count	Lift Liner™ or Drum Number	Gross Weight (lbs)	Waste Weight (lbs)	Container Volume (ft^3)	Waste Volume (ft^3)	Total Activity (mCi)
1	9226	7120	7040	120	120	0.10622
2	9227	8760	8680	200	200	0.13096
3	9228	10200	10120	200	200	0.15269
4	9229	12040	11960	200	200	0.18045
5	9230	14020	13940	200	200	0.21033
6	9231	15690	15610	200	200	0.23553
7	9232	15510	15430	200	200	0.23281
8	9233	13570	13490	200	200	0.20354
9	9234	15340	15260	200	200	0.23024
10	9235	16680	16600	200	200	0.25046
11	9236	15170	15090	200	200	0.22768
12	9237	15800	15720	200	200	0.23718
13	9238	13390	13310	200	200	0.20082
14	9239	15400	15320	200	200	0.23115
15	9240	280	104	7.5	1.39	8.00E-04
16	9241	280	105	7.5	1.41	8.15E-04
17	9242	270	106	7.5	1.42	8.15E-04
18	9243	250	95	7.5	1.28	7.39E-04
19	9244	240	90	7.5	1.2	6.94E-04
20	9245	280	104	7.5	1.39	8.00E-04
21	9246	280	106	7.5	1.42	8.15E-04
22	9247	11340	11260	200	200	0.16989
23	9248	7160	7080	120	120	0.10682
Totals for All		209070	206620	3092.5	3049.51	3.11
Totals for Lift Liners™		207190	205910	3040	3040	3.11
Totals for Drums		1880	710	52.5	9.51	0.00548

Notes:

lbs = pounds
ft^3 = cubic feet
mCi = millicurie
Totals for weight and volume are rounded.
Waste Weight = Gross Weight – Weight of Lift Liner™ (80 lbs)
The 710 lbs total for Drums is the sum of 361.7 lbs for soil and 347.72 lbs for preserved soil.
Items 15 through 21 are Drums; the remainder is Lift Liners™.
Total activity for Lift Liners™, Drums, and the sum has been rounded to 3 significant digits.

SOILS REPORT FALL 2002

FORMER SYLVANIA ELECTRIC PRODUCTS INCORPORATED FACILITY

HICKSVILLE, NEW YORK

SITE NUMBER V00089-1

GTE OPERATIONS SUPPORT INCORPORATED

For:

GTE Operations Support Incorporated
600 Hidden Ridge Drive
Irving, Texas 75038

Prepared by:

URS Corporation
1701 Golf Road, Suite 1000
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March 2003

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EXECUTIVE SUMMARY

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List of Abbreviations and Acronyms

ASP	analytical services protocol
bgs	below ground surface
CAMP	community air monitoring program
CERCLA	Comprehensive Environmental Response Compensation Liability Act
CLP	contract laboratory program
DUSR	data usability summary report
EM	electromagnetic
FSP	Field Sampling Plan
GPR	Ground Penetrating Radar
GTEOSI	GTE Operations Support Incorporated
J	estimated value
mg/Kg	milligram per kilograms
mrem	millirem
MS/MSD	matrix spike/matrix spike duplicate
NaI	sodium iodide
NCDPW	Nassau County Department of Public Works
ND	not detected
NRC	Nuclear Regulatory Commission
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSWER	Office of Solid Waste and Emergency Response (USEPA)
PCE	tetrachloroethene
PID	photoionization detector
ppb	parts per billion
QA/QC	quality assurance and quality control
QAPP	quality assurance project plan
RI/FS	Remedial Investigations/Feasibility Studies
RPD	relative percent difference
TAGM	Technical and Administrative Guidance Memorandum
TAL	target analyte list
TCE	trichloroethene
TLD	thermoluminescent dosimeters
ug/Kg	microgram per kilogram
URS	URS Corporation
USEPA	United States Environmental Protection Agency
USRADS	Ultrasonic Ranging and Detection System
VOC	Volatile Organic Compounds
VCP	Voluntary Cleanup Program

EXECUTIVE SUMMARY

This document supplements previous soil investigations of the Former Sylvania Electric Products Incorporated Facility in Hicksville, New York (the Site) performed by GTE Operations Support Incorporated (GTEOSI) in cooperation with the New York State Department of Environmental Conservation (NYSDEC) under voluntary cleanup program (VCP) agreement WI-0844-98-08, dated April 7, 1999.

The Site consists of three separately owned properties that are located at 70 Cantiague Rock Road (the 70 Property), 100 Cantiague Rock Road (the 100 Property), and 140 Cantiague Rock Road (the 140 Property).

From 1952 to 1966 the Site was operated for the fabrication of reactor fuel elements, as well as high temperature coatings and composite alloys for space and aircraft industries. Three main buildings and twelve support buildings were used for this purpose. All buildings were demolished prior to 1970 with the exception of a portion of Building 4, which was decommissioned in accordance with applicable regulations and released for unrestricted use by the New York State Department of Labor in 1967.

This investigation was designed to confirm proper sheet pile placement prior to the commencement of remedial activities. In total, 170 borings were advanced at the Site during this phase. Soil cores were screened in the field and samples were analyzed by STL Laboratories, Inc., of Earth City, Missouri. This round of analytical results confirms the isolated areas of radioactive materials on each of the properties investigated. These areas are beneath pavement or occur several feet below ground. Tetrachloroethene (PCE) and trichloroethene (TCE), common solvents, were found in several subsurface locations.

In cooperation with NYSDEC, the investigative program is complete. Remedial activities will begin in the Spring of 2003.

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

This report presents the findings of the soil investigation program performed at the Former Sylvania Electric Products Incorporated Facility (the Site), Cantiague Rock Road, Hicksville, New York (Figure 1). The Site is comprised of three adjacent parcels; 70, 100, and 140 Cantiague Rock Road. The investigation was performed by URS Corporation (URS) on behalf of GTE Operations Support Incorporated (GTEOSI) in cooperation with the New York State Department of Environmental Conservation (NYSDEC). The investigation was conducted in accordance with the approved *Soil Boring Work Plan (Revision 1: September 2002)* and pursuant to the Voluntary Cleanup Program (VCP) Agreement between GTEOSI and the NYSDEC (the agreement).

This investigation was intended to provide the information necessary to accurately and safely carry out installation of shoring/sheet pile and excavation activities at the Site. The investigation was conducted to verify the horizontal and vertical extent of select contaminant impacts to Site soils. The scope was based on the acquisition of representative samples supplementing those obtained during prior investigations. The investigation was performed in accordance with applicable investigative procedures set forth in the NYSDEC *Technical and Administrative Guidance Memorandum (TAGM), Guidelines for Remedial Investigations/Feasibility Studies (RI/FS), HWR-89-4025, March 1989* (NYSDEC 1989) and United States Environmental Protection Agency (USEPA) *Guidance for Conducting Remedial Investigations and Feasibility Studies Under Comprehensive Environmental Response and Compensation Liability Act (CERCLA)* (USEPA 1988).

The soil investigation program has been performed in several phases. In Phase I of the initial Site investigation a high-resolution ground penetration radar (GPR) survey, an Ultrasonic Ranging and Detection System (USRADS) exterior radiation survey, and a Site survey were performed. Phase II included advancing 195 soil borings, installing monitoring wells, collecting ground water samples, analyzing soil and water samples, compiling, validating, and interpreting data, and preparing the reports. The current soil investigation, presented herein, was performed to define proper sheet pile placement.

1.1.1 Site Description

The Site is in west central Long Island, approximately 1 mile west of the Hicksville, New York town center (Figure 1). Over 95 percent of the 9.5-acre fenced Site is either paved or occupied by buildings. The Site is relatively flat with a slight downward slope toward the south. Areas addressed as part of this report are described in further detail below and are shown in the Site photographs (Appendix A) and on Figure 2.

Historically, the Site was comprised of Lots 79 and 80 containing three main buildings (designated as buildings 1, 2, and 4) and twelve support buildings used to fabricate reactor fuel elements. With the exception of a portion of historical Building 4, the Site buildings were demolished prior to 1970. Before the construction of the current buildings, the property was subdivided into three new parcels: the 70 Property, the 100 Property, and the 140 Property (identified as Lot 94, Lot 99 and Lot 100). GTEOSI's corporate genealogy relevant to its involvement with historical Site uses, manufacturing, and disposal practices was presented in the Work Plan (O'Brien & Gere 1998). The 70 Property, on the southern portion of the Site, consists of an approximately 79,210-square foot (ft^2) one-story brick building and the associated land. The 100 Property is centrally located on the Site and consists of the fenced area enclosing an 80,100-ft^2 two-story distribution building and paved parking lots. The 140 Property houses an approximately 54,500-ft^2 one-story office and industrial building. Additional information and property descriptions were presented in the *Soil Boring Work Plan, Revision 1: September 2002* (URS 2002).

1.1.2 Adjacent properties

The Site is bounded to the north by the Nassau County Department of Public Works (NCDPW), a facility that stores and maintains heavy equipment for road maintenance. The Nassau County Parks Department (Cantiague Park) Golf Course driving range is to the east. South of the Site is a property formerly owned by General Semiconductor (and formerly General Instrument), which has been designated a Class 2 State listed inactive hazardous waste site. Cantiague Rock Road and commercial and industrial properties are to the west.

1.2 PROJECT OBJECTIVES

The investigation addresses the following program objectives:

- Gather additional geotechnical information data;
- Assess the horizontal and vertical extent of select contaminant impacts to soil that are required to carry out the excavation activities and shoring design; and
- Further define the nature and extent of residuals in the soils at selected locations.

These objectives are intended to satisfy the requirements of the agreement.

1.3 REPORT ORGANIZATION

The remainder of this report is organized as follows:

- Section 2 presents a discussion of the Site physical characteristics including geology and hydrogeology;
- Section 3 describes the investigation program including a description of field and data analysis methods;
- Section 4 presents the analytical results; and
- Section 5 summarizes the findings of the investigation.

2.0 PHYSICAL CHARACTERISTICS

2.1 GEOLOGY

2.1.1 Regional Geology

The bedrock underlying Long Island is Precambrian to lower Paleozoic in age (700 million to 500 million years before present). The bedrock geology predominately consists of schist and gneiss with igneous intrusions. The bedrock includes some fractures; however, the fractures are not considered significant to the regional hydrogeologic regime because of relatively low fracture permeability in comparison to the unconsolidated deposits. The bedrock surface slopes approximately 62 feet per mile toward the southeast and ranges from 160 feet below sea level (bsl) at the north shore of Nassau County to approximately 900 feet bsl near the Site (Kilburn 1979).

A highly weathered zone containing clay and sandy clay mixed with eroded rock and mineral fragments is present above the bedrock. This zone is approximately 50 feet thick.

The unconsolidated deposits above the weathered zone are approximately 1,100 feet thick near the Site, thinning in the northwestern part of Nassau County and thickening southward. The unconsolidated deposits consist of residual or weathered bedrock, and sand, silt, clay, and gravel of alluvial or glacial origin (Isbister 1966; Smolensky and Feldman 1988).

2.1.2 Site Geology

The Site is located on a glacial outwash plain. Overburden at the Site consists of unconsolidated deposits. On-site boring logs and related literature indicate that surficial deposits are primarily sand with some gravel extending from the surface to approximately 70 feet below ground surface (bgs). Geoprobe® borings were advanced at the Site to a maximum depth of 24 feet bgs (Table 1). According to the Nassau County Soil Survey (1987), soils surrounding the Site are classified as urban land. Urban land soils are defined as at least 85 percent covered by impervious material including parking lots, shopping centers and industrial buildings (USDA 1987).

2.2 HYDROGEOLOGY

The regional hydrogeology of Long Island includes a ground water divide that trends east to west along north central Long Island. Ground water north of the divide discharges to Long Island Sound and ground water south of the divide discharges into Great South Bay (Kilburn 1979). Four major aquifers exist within the unconsolidated deposits that underlie Nassau County. From shallow to deep, the aquifers are the Upper Glacial Aquifer, Magothy Aquifer, Port Washington Aquifer and the Lloyd Aquifer. These aquifers are hydraulically interconnected based on their water-bearing properties and by the ground water flow dynamics. The shallower two aquifers are described below.

The Upper Glacial Aquifer is approximately 85 feet thick with the upper 10-feet consisting of fill and recent deposits. Recharge infiltrates through the Upper Glacial Aquifer to reach the lower aquifers. The Upper Glacial Aquifer is highly permeable and has a hydraulic conductivity that ranges from 130 feet per day in north central Long Island, to at least 270 feet per day in southern Long Island (Eckhardt, Flipse, and Oaksford 1989).

The Magothy Aquifer serves as Long Island's principal source of fresh water. The Magothy Aquifer is approximately 600 feet thick and is first present approximately 85 feet bgs. Due to high concentrations of clays in the upper portions of the Magothy Aquifer, most public water supply wells are screened in the lower portions of the aquifer. The Magothy Aquifer is considered moderate to highly permeable, with an average hydraulic conductivity of 50 feet per day (Smolensky and Feldman 1988).

3.0 SOIL BORING INVESTIGATION

This section describes the field methods used to characterize the Site. Investigation field efforts included:

- Utilities clearance;
- Boring installations;
- Sample screening, collection, and disposition; and
- Worker exposure monitoring.

The field methods used are described in the following sections. Figure 2 depicts the soil boring locations conducted during the current and previous Site investigations. Figure 3 depicts soil boring locations with historic Site conditions, such as former building locations.

3.1 SITE CHARACTERIZATION METHODS

3.1.1 Utility Clearance

Prior to initiation of the field activities, sampling locations were marked and cleared in concurrence with GTEOSI and NYSDEC. The identification of subsurface objects, pipes, and utilities is dependent upon the recognition of magnetic fields or electromagnetic waves and their perturbations. NAEVA Geophysics, Inc. of Tappan, New York performed an underground utility clearance around each proposed boring using a Radio Detection RD-600 Electromagnetic (EM) utility-locating instrument, a Fisher TW-6 shallow-focus terrain conductivity meter, a Metrotech 50/60 EM receiver to detect conduits that carry 60 Hz current in the 440 to 20,000 volt range, a Dyntel 500A EM transmitter and receiver, and GSSI-Sir-3 GPR instrumentation. Standard underground utility line markings were used including red for electric, yellow for gas-oil-steam, orange for communications-CATV, blue for water, green for sewer, pink for temporary survey markings, and white for areas of proposed excavation or soil boring advancement.

3.1.2 Boring Installation

The investigation was conducted from October 7, 2002 through December 11, 2002. The objective of the sampling was to provide data to aid in the placement of sheet pile and further define horizontal and vertical extent of select contaminant impacts. Although only 57 borings were proposed, the number of borings was expanded to 170 due to field conditions. The soil cores were obtained using a direct push methodology using 4-foot acetate sleeves. With the exception of some discrete samples collected at specific locations, the soil cores started from the ground surface and proceeded to a depth dictated by the area being investigated, the levels of radioactivity and/or the headspace VOC readings. Screening techniques are described below. The majority of the borings were drilled to 20 feet or less; 14 select borings were advanced to 40 feet bgs. A table showing the boring depths is included as Table 1. Soil boring logs are in Appendix B.

A geologist described soils according to the Unified Soil Classification System. Soil descriptions include: soil type, color, percent recovery, moisture content, and odor. Sample recoveries varied ranged from 0 to 100 percent due to subsurface conditions. Field screening was performed to evaluate and select the soil interval(s) from the soil core to be sent to the laboratory. A representative portion of each sample was retained for analysis and labeled with: Site name, boring number, sample interval, date, and time of collection. If more than one discrete subsurface zone within a soil boring was of interest, either by visual observation or by field screening, additional soil samples were collected and analyzed for the described parameters. Laboratory analysis included: radionuclides, volatile organic compounds (VOCs), metals, nickel, and percent solids. Specific procedures and methodologies were presented in the Field Sampling Plan (FSP), Appendix B to the *Soil Boring Work Plan, Revision 1: September 2002* (URS 2002).

Screening Techniques

Radiation survey instruments were used to screen soil samples for radioactivity and monitor breathing air samples for internal exposure, and scan personnel, equipment, materials and waste materials for release. The steel casing was scanned with a Model 19 for gamma radiation as it was removed from the hole. Additionally, the 0.016" acetate liners, which were used inside the steel casings, were scanned for the presence of beta radiation prior to opening and VOCs prior to logging the soil core. The liners were scanned with a photoionization detector (PID), a 2" x 2" Sodium Iodide (NaI) Detector, and GM Pancake Probe. The field screening results are provided in Tables 2 and 3.

Thermoluminescent Dosimeters (TLD)

Whole body pocket style dosimetry badges supplied by Landauer, Inc. were worn by personnel engaged in field activities to evaluate their exposure to beta and gamma radiation. The TLD contains crystals of lithium fluoride that when exposed to radiation becomes excited. The excited state (energy accumulated from the exposure to radiation) is maintained in the badge media until it is analyzed. Landauer analytical reports indicated a minimal reporting limit of less than 1 mrem for the wear period.

3.1.3 Exposure Monitoring

The Community Air Monitoring Program (CAMP) was established at the Site perimeter during the field investigation activities to monitor for potential off-Site exposures of chemical and radiological constituents of concern. Additionally, exposure monitoring was conducted to evaluate if Site workers were exposed to chemicals or radiation during fieldwork and, if so, to what extent. Monitoring equipment included the use of a Mini Rae 2000, a portable aerosol monitor (DustTrak), and radiation detection instrumentation. The Mini Rae 2000 photoionization detector monitors total concentrations of many gases and vapors (compounds with an ionization potential of less than 10.6 eV). The DustTrak detects the presence of respirable dust particles that would be associated with alpha particle emitting radionuclides. Monitoring was also conducted in the work zones using sampling pumps and filter cassettes placed on the geologist's table and drill rig. No measurable levels of airborne particulates were detected.

Prior to each day's use, field monitoring equipment was calibrated and functionality tested. The calibration ensures that the equipment was functioning within the allowable tolerances established by the manufacturer and as required by the project. Daily logs, health and safety information, and equipment calibration records were maintained. Logs include date, equipment used, monitoring performed, and work completed. Details of the monitoring devices are provided below.

3.2 DATA ANALYSIS

3.2.1 Laboratory Methods

Samples were collected from October 7, 2002 to December 17, 2002 and submitted for analysis by United States Environmental Protection Agency (USEPA) Methods with NYSDEC Analytical Services Protocol (ASP-91). Sample analyses were performed by *STL Laboratories in accordance with the Methods for Chemical Analysis of Water and Waste, USEPA 600/4-83-020, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, SW-486.* The samples were analyzed for: VOCs (USEPA Method 8260B), metals (USEPA Method 6010B), total percent solids (USEPA 2540-G), gamma spectroscopy (Mod 300) and alpha spectroscopy for thorium (3004/RP-725) and uranium (3050/RP-725).

Data management

Analytical results were received from the laboratory in hardcopy and electronic formats. The electronic data were used to establish a database, develop summary tables, and validate data. The data were manually reviewed during the data validation to assure consistency and correct reporting errors that may have occurred during data entry.

Data validation and usability assessment

Data validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the system and especially to samples, their measurement and the actual data output. The analytical data generated for this investigation were evaluated by URS using the quality assurance/quality control (QA/QC) criteria and guidance methods established in the project quality assurance project plan (QAPP), Appendix C of the *Soil Boring Work Plan, Revision 1: September 2002* (URS 2002) and specified in Section C.2.2 Laboratory Analyses. Nonconformance from the QA/QC criteria were qualified based on guidance provided in the following references:

GTE Operations Support Incorporated. *Soil Remediation Program Work Plan, October 2002: Revision 2* (QAPP – Appendix H), October 2002;

New York State Department of Environmental Conservation (NYSDEC). 2000. *Analytical Services Protocol (ASP).* Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. June 2000;

USEPA *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, (SW846). Final Update IIIA. April 1998;

USEPA *Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008. October 1999;

USEPA *Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review*, EPA 540-R-01-008. July 2002;

USEPA *Region II Contract Laboratory Program (CLP) Organics Data Review, SOP No. HW-6, Revision #11*. 1996; and

USEPA *Region II Evaluation of Metals Data for the Contract Laboratory Program (CLP) 3/90*. 1992.

Analytical reporting requirements are presented in the QAPP and in the *Soil Boring Work Plan, Revision 1: September 2002* (URS 2002). Five qualifiers were used during the data validation process "R", "U", "J", "UJ", and "BU". The use of these qualifiers is consistent with guidance presented in *USEPA Risk Assessment Guidance for Superfund* (USEPA 1992a).

Overall, 100 percent of the data were determined to be usable for qualitative and quantitative purposes. The data usability summary reports (DUSRs) by analysis (radiological, VOC, and metals) are included in Appendix C. Therefore, the completeness objective of 90 percent as stated in the QAPP was met.

3.2.2 Data Validation and Interpretation

Data analyzed by gamma and alpha spectroscopy were evaluated using the *Guidance for Radiochemical Data Validation*, RD4, and the Science Applications International Corporation (SAIC) *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyzes*, 143-ARCS-00.08, Revision 06, for conventional QA/QC parameters such as holding times, sample preservation, calibration, system performance and document completeness (USDOE 1995 and SAIC 1992).

Gamma spectroscopy analyses were performed on each sample as a qualitative method for determining what gamma emitting isotopes were present and a semi-quantitative method for determining the approximate activities for the detected isotopes. Using this method, soil samples obtained from the Site were dried, ground, homogenized, and weighed. The samples were then allowed to set for at least 21 days in order to allow the radon-222 and its daughters, which may have been driven off in the preparation steps, to re-establish equilibrium.

Samples submitted for gamma analyses were counted using high-purity germanium gamma detectors. Data were interpreted by comparing peaks detected versus a natural occurring radioactive materials software library maintained with the instrumentation. An isotope was reported whenever a peak was detected, whether the activity was above detection levels or not. Not all emitters have unique "finger-prints" for energies of gamma emissions; many energies are shared by multiple isotopes and cause the system software to over-estimate isotope activities. Data were reported as measured regardless of whether isotopic results may be biased based on the presence of other isotopes. Additionally, for the purposes of reporting uranium-238 (U-238) and thorium-232 (Th-232) concentrations from gamma spectroscopy data, the following method of data interpolation was used:

Isotope	Reported Result
Th-232	Ac-228 (actinium-228)
U-238	Pa-234M (protactinium-234M)

Alpha spectrometry was used as a final confirmation step to quantify select samples for the amount of uranium and thorium, the principle isotopes that were identified via gamma spectroscopy. Alpha spectroscopy provides an extremely accurate quantitative method for determining uranium, thorium, and radium activities. Because interfering isotopes have been separated out in the sample purification steps, the methodology is fairly isolated from interferences.

4.0 ANALYTICAL RESULTS

The investigation focused on delineating non-impacted areas for sheet pile placement. The borings were advanced in areas believed to be the perimeters of the proposed excavations, potential sheet pile areas, or areas where vertical definition was needed. The background information explaining the placement of the soil borings was provided in the *Soil Boring Work Plan, Revision 1: September 2002* (URS 2002).

Soil characterization within the study area consisted of the advancement of soil borings, soil screening and the collection of soil samples. The boring depths were based on Site-specific areas of interest and field conditions encountered as follows.

- Locations characterized as lateral boundary samples were investigated to approximately 20 feet bgs; and
- Borings that were used to define vertical boundaries were advanced until impacts were no longer noted or the limits of the drilling equipment were reached (approximately 40 feet bgs).

Borings identified by multiple designations indicate either refusal during drilling (i.e. U-100a, b, and c) or concentrations of compounds of interest were detected during field screening and further borings were performed to delineate the subsurface (U-048 a-d). Prior to opening and logging the core, field screening was used to evaluate the presence of beta or gamma radiation for health and safety purposes. Field screening was also used to aid in the selection of samples to be submitted for laboratory analysis. Soil core radiation field screening logs are included as Tables 2 and 3. Screening for VOCs is indicated on the boring logs (Appendix B).

Samples of the soil cores were sent to the laboratory for analysis including radionuclides, VOCs, and metals. Table 4 Sample Identification and Analytical Summary, provides the boring locations and analyses run on a per sample basis. Radionuclide analytical results for gamma and alpha spectroscopy are provided in Tables 5 and 6. Chemical analytical results for the soil borings are presented as Tables 7 through 9.

4.1 RADIOLOGICAL CHARACTERIZATION

Selected samples were analyzed for gamma and alpha spectroscopy (Tables 5 and 6). Concentrations of thorium and uranium greater than proposed cleanup levels were detected in some shallow soil samples. Of the 306 gamma spectroscopy samples analyzed, there were 56 samples containing uranium 238 (inferred from protactinium-234m) and 20 samples containing thorium-232 (inferred from actinium-228) above cleanup levels. The concentrations of U-238 ranged from < 0.03 pCi/g to 800 pCi/g. Figures 6 and 7 show the boring locations, sample interval(s) and concentration of uranium and thorium. Alpha spectroscopy was used to further examine select samples (Figure 6 and Table 6).

4.2 CHEMICAL CHARACTERIZATION

Selected samples were analyzed for VOCs, Target Analyte List (TAL) metals, and nickel (Tables 7, 8, and 9, respectively, and Figures 4 and 5, respectively). Of the 171 samples analyzed, there were 10 samples containing PCE and 3 samples containing TCE above cleanup levels. The concentrations of PCE ranged from <2.5 ug/Kg to 540,000 ug/Kg. Low concentrations of toluene, xylene, acetone and other VOCs were detected in a few other borings. No concentrations of nickel above the cleanup level were detected in the samples analyzed in this investigation phase.

5.0 CONCLUSIONS

The Site work documented in this report was conducted in accordance with the requirements under the VCP agreement signed between GTEOSI and NYSDEC, dated April 1999. The field work was conducted to:

- Gather additional geotechnical information data;
- Assess the horizontal and vertical extent of select contaminant impacts to soil that are required to carry out the excavation activities and shoring design; and
- Further define the nature and extent of residuals in the soils at selected locations.

From the execution of these steps and evaluation of the collected data, it is concluded that:

- Geotechnical information obtained will aid in the sheet piling installation and shoring system design. Geotechnical information is included on the boring logs in Appendix B.
- The horizontal boundaries of the soil excavation have been defined. The vertical extent of the radionuclides and nickel have been defined; and
- Additional sampling was conducted inside the 140 Building near SB-119 (U-132) to verify the vertical extent of impacts and near SB-134 (U-029) to verify the western extent (lateral boundary) of impacts. Additional borings were advanced east of the 100 Property near SB-067 (U-074 and U-115) and SB-064 (U-075A and U-120) to further characterize VOC impacts.

Finally, the investigation was performed in agreement with the approved Work Plan and in accordance with Section I of the VCP agreement. Sufficient data have been acquired to complete the scope of work presented in the approved Work Plan and that no additional data are necessary for this purpose.

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TABLES

Table 1
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Soil Boring Depths

Sample ID	Depth	Sample ID	Depth	Sample ID	Depth	Sample ID	Depth	Sample ID	Depth
U-1	8	U-29	8	U-58	8	U-85	8	U-114	20
U-2	40	U-30	8	U-59	8	U-86A	12	U-115	20
U-3	20	U-31	18	U-60	8	U-86B	20	U-116	40
U-4	8	U-31B	20	U-61	8	U-87	8	U-117	40
U-5A	4	U-32	20	U-62	8	U-88	8	U-118	40
U-5B	16	U-33	16	U-63	8	U-89	8	U-119	20
U-5C	20	U-33B	20	U-64	12	U-89B	8	U-120	40
U-6	16	U-34	20	U-65A	2	U-90	4	U-121	20
U-6B	20	U-35B	20	U-65B	12	U-91	4	U-122	20
U-7	8	U-36	40	U-66	8	U-92	20	U-123	12
U-8	16	U-37	20	U-67	8	U-93	20	U-124	40
U-9	16	U-38	20	U-68	8	U-94	12	U-125	20
U-9B	20	U-39	8	U-69	8	U-95	20	U-126	12
U-10	--	U-40	20	U-70	8	U-96	8	U-127	20
U-11	16	U-41	20	U-71	8	U-96B	20	U-128	40
U-12	16	U-42	20	U-72	8	U-97	20	U-129	40
U-13	16	U-43	20	U-73	8	U-98	20	U-130	40
U-14	16	U-44	20	U-74	12	U-99	20	U-131	40
U-15	40	U-45	--	U-74B	20	U-100	4	U-132	24
U-16A	16	U-46	20	U-75A	8	U-100B	4	U-133	40
U-16B & C	--	U-47	20	U-75B	8	U-100C	20	U-134	40
U-16D	20	U-48A	2	U-75C	8	U-101	12	U-135	20
U-17	20	U-48B	8	U-75D	10	U-102	8	U-136	8
U-18	20	U-48C	8	U-75E	12	U-103	8	U-137	8
U-19	20	U-48D	8	U-76	8	U-104	8	U-138	8
U-20	20	U-48E	8	U-77	8	U-105	12	U-139	8
U-21	20	U-49	20	U-78	8	U-106	20	U-140	4
U-22	8	U-50	20	U-79A	--	U-107B	20	U-140B	8
U-23	12	U-51	20	U-79B	--	U-108	20	U-141	8
U-24	12	U-52	20	U-79C	8	U-109	20	U-142	4
U-25	16	U-53	20	U-80	8	U-110	12	U-143	4
U-26	12	U-54	20	U-81	8	U-111	12	U-144	4
U-27	12	U-55	20	U-82	12	U-112	20	U-145	20
U-27B	12	U-56	20	U-83	12	U-113	20	U-146	8
U-28	8	U-57	20	U-84	8	U-113B	4	U-147	16

Notes:
All depths are in feet
-- refusal
NA - Not Advanced

Table 1
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Soil Boring Depths

Sample ID	Depth	Sample ID	Depth	Sample ID	Depth	Sample ID	Depth	Sample ID	Depth
U-1	8	U-29	8	U-58	8	U-85	8	U-114	20
U-2	40	U-30	8	U-59	8	U-86A	12	U-115	20
U-3	20	U-31	18	U-60	8	U-86B	20	U-116	40
U-4	8	U-31B	20	U-61	8	U-87	8	U-117	40
U-5A	4	U-32	20	U-62	8	U-88	8	U-118	40
U-5B	16	U-33	16	U-63	8	U-89	8	U-119	20
U-5C	20	U-33B	20	U-64	12	U-89B	8	U-120	40
U-6	16	U-34	20	U-65A	2	U-90	4	U-121	20
U-6B	20	U-35B	20	U-65B	12	U-91	4	U-122	20
U-7	8	U-36	40	U-66	8	U-92	20	U-123	12
U-8	16	U-37	20	U-67	8	U-93	20	U-124	40
U-9	16	U-38	20	U-68	8	U-94	12	U-125	20
U-9B	20	U-39	8	U-69	8	U-95	20	U-126	12
U-10	--	U-40	20	U-70	8	U-96	8	U-127	20
U-11	16	U-41	20	U-71	8	U-96B	20	U-128	40
U-12	16	U-42	20	U-72	8	U-97	20	U-129	40
U-13	16	U-43	20	U-73	8	U-98	20	U-130	40
U-14	16	U-44	20	U-74	12	U-99	20	U-131	40
U-15	40	U-45	--	U-74B	20	U-100	4	U-132	24
U-16A	16	U-46	20	U-75A	8	U-100B	4	U-133	40
U-16B & C	--	U-47	20	U-75B	8	U-100C	20	U-134	40
U-16D	20	U-48A	2	U-75C	8	U-101	12	U-135	20
U-17	20	U-48B	8	U-75D	10	U-102	8	U-136	8
U-18	20	U-48C	8	U-75E	12	U-103	8	U-137	8
U-19	20	U-48D	8	U-76	8	U-104	8	U-138	8
U-20	20	U-48E	8	U-77	8	U-105	12	U-139	8
U-21	20	U-49	20	U-78	8	U-106	20	U-140	4
U-22	8	U-50	20	U-79A	--	U-107B	20	U-140B	8
U-23	12	U-51	20	U-79B	--	U-108	20	U-141	8
U-24	12	U-52	20	U-79C	8	U-109	20	U-142	4
U-25	16	U-53	20	U-80	8	U-110	12	U-143	4
U-26	12	U-54	20	U-81	8	U-111	12	U-144	4
U-27	12	U-55	20	U-82	12	U-112	20	U-145	20
U-27B	12	U-56	20	U-83	12	U-113	20	U-146	8
U-28	8	U-57	20	U-84	8	U-113B	4	U-147	16

Notes:
All depths are in feet
-- refusal
NA - Not Advanced

U-2, U-15, U-36, 11 = 14 borings to 40'
35 rows x 5 columns = 175 subtract no depth (-5) = 170

Table 1
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Soil Boring Depths

Sample ID	Depth	Sample ID	Depth	Sample ID	Depth	Sample ID	Depth	Sample ID	Depth
U-1	8	U-29	8	U-58	8	U-85	8	U-114	20
U-2	40	U-30	8	U-59	8	U-86A	12	U-115	20
U-3	20	U-31	18	U-60	8	U-86B	20	U-116	40
U-4	8	U-31B	20	U-61	8	U-87	8	U-117	40
U-5A	4	U-32	20	U-62	8	U-88	8	U-118	40
U-5B	16	U-33	16	U-63	8	U-89	8	U-119	20
U-5C	20	U-33B	20	U-64	12	U-89B	8	U-120	40
U-6	16	U-34	20	U-65A	2	U-90	4	U-121	20
U-6B	20	U-35B	20	U-65B	12	U-91	4	U-122	20
U-7	8	U-36	40	U-66	8	U-92	20	U-123	12
U-8	16	U-37	20	U-67	8	U-93	20	U-124	40
U-9	16	U-38	20	U-68	8	U-94	12	U-125	20
U-9B	20	U-39	8	U-69	8	U-95	20	U-126	12
U-10	--	U-40	20	U-70	8	U-96	8	U-127	20
U-11	16	U-41	20	U-71	8	U-96B	20	U-128	40
U-12	16	U-42	20	U-72	8	U-97	20	U-129	40
U-13	16	U-43	20	U-73	8	U-98	20	U-130	40
U-14	16	U-44	20	U-74	12	U-99	20	U-131	40
U-15	40	U-45	--	U-74B	20	U-100	4	U-132	24
U-16A	16	U-46	20	U-75A	8	U-100B	4	U-133	40
U-16B & C	--	U-47	20	U-75B	8	U-100C	20	U-134	40
U-16D	20	U-48A	2	U-75C	8	U-101	12	U-135	20
U-17	20	U-48B	8	U-75D	10	U-102	8	U-136	8
U-18	20	U-48C	8	U-75E	12	U-103	8	U-137	8
U-19	20	U-48D	8	U-76	8	U-104	8	U-138	8
U-20	20	U-48E	8	U-77	8	U-105	12	U-139	8
U-21	20	U-49	20	U-78	8	U-106	20	U-140	4
U-22	8	U-50	20	U-79A	--	U-107B	20	U-140B	8
U-23	12	U-51	20	U-79B	--	U-108	20	U-141	8
U-24	12	U-52	20	U-79C	8	U-109	20	U-142	4
U-25	16	U-53	20	U-80	8	U-110	12	U-143	4
U-26	12	U-54	20	U-81	8	U-111	12	U-144	4
U-27	12	U-55	20	U-82	12	U-112	20	U-145	20
U-27B	12	U-56	20	U-83	12	U-113	20	U-146	8
U-28	8	U-57	20	U-84	8	U-113B	4	U-147	16

Notes:
All depths are in feet
-- refusal
NA - Not Advanced

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-1	U-2[GT]	U-3	U-4	U-5a	U-5b	U-5c	U-6	U-6b	U-7	U-8	U-9	U-9b	U-10	U-11
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	48	--	--	--	--	33	--	40	43	32	--	--	--
1		--	--	161	--	40	--	--	43	--	49	46	47	--	--	41
1.5		38	--	32	42	177	--	--	33	--	45	57	44	--	--	32
2		353	162	33	42	57	--	--	31	--	40	36	45	--	--	43
2.5		367	--	30	35	34	--	--	31	--	49	53	54	--	--	39
3		130	--	33	49	65	--	--	44	--	51	53	56	--	--	136
3.5		55	--	50	32	42	--	--	36	--	51	35	49	--	--	47
4		41	148	43	44	37	--	--	37	--	39	44	47	--	--	42
4.5		64	--	42	31	--	58	--	--	--	49	--	--	--	--	46
5		43	--	42	27	--	32	--	30	--	49	39	57	--	--	44
5.5		42	--	25	42	--	36	--	30	--	34	36	40	--	--	29
6		49	52	47	26	--	42	--	36	--	48	42	52	--	--	26
6.5		41	--	46	22	--	39	--	25	--	41	41	46	--	--	35
7		35	--	41	25	--	30	--	51	--	43	46	42	--	--	36
7.5		36	--	29	43	--	36	--	38	--	60	43	43	--	--	35
8		30	47	23	46	--	38	--	27	--	38	51	39	--	--	32
8.5		--	--	28	--	--	--	--	--	--	--	--	--	--	--	--
9		--	--	32	--	--	--	--	--	--	--	--	--	--	--	--
9.5		--	--	52	--	--	35	--	--	--	--	36	--	--	--	43
10		--	48	38	--	--	34	--	35	--	--	40	--	--	--	34
10.5		--	--	30	--	--	35	--	56	--	--	49	49	--	--	58
11		--	--	30	--	--	36	--	36	--	--	45	35	--	--	31
11.5		--	--	36	--	--	45	--	43	--	--	32	51	--	--	32
12		--	41	51	--	--	34	--	30	--	--	39	34	--	--	33
12.5		--	--	--	--	--	29	--	--	--	--	--	--	--	--	50
13		--	--	--	--	--	42	--	27	--	--	36	--	--	--	25
13.5		--	--	42	--	--	23	--	39	--	--	41	--	--	--	38
14		--	50	38	--	--	33	--	40	--	--	39	--	--	--	48
14.5		--	--	39	--	--	37	--	37	--	--	38	--	--	--	33
15		--	--	38	--	--	43	--	48	--	--	60	32	--	--	60
15.5		--	--	28	--	--	33	--	46	--	--	33	46	--	--	44
16		--	42	46	--	--	44	35	32	--	--	33	41	--	--	37
16.5		--	--	--	--	--	--	43	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	44	--	--	--	--	--	--	--	--
17.5		--	--	44	--	--	--	39	--	--	--	--	--	--	--	--
18		--	39	31	--	--	--	31	--	40	--	--	--	39	--	--
18.5		--	--	42	--	--	--	44	--	35	--	--	--	38	--	--
19		--	--	36	--	--	--	33	--	32	--	--	--	39	--	--
19.5		--	--	36	--	--	--	52	--	31	--	--	--	49	--	--
20		--	50	28	--	--	--	28	--	32	--	--	--	41	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-1	U-2[GT]	U-3	U-4	U-5a	U-5b	U-5c	U-6	U-6b	U-7	U-8	U-9	U-9b	U-10	U-11
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	37	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	45	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	49	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	23	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	43	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	38	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	31	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	60	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	49	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	61	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

	Sample ID	U-12	U-13	U-14	U-15	U-16a	U-16b	U-16c	U-16d	U-17	U-18	U-19	U-20	U-21	U-22	U-23
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	51	--	--	47	--	--	--	--	--	--	--	--	48	--
1		--	57	--	--	57	--	--	--	--	--	29	--	--	38	49
1.5		57	92	29	--	68	--	--	--	--	--	62	43	56	41	39
2		41	150	90	64	56	--	--	--	--	33	52	69	42	57	50
2.5		89	78	62	--	57	--	--	--	--	67	59	52	43	47	43
3		64	43	39	--	70	--	--	--	46	40	100	86	48	31	64
3.5		37	50	29	--	69	--	--	--	47	54	66	60	47	50	75
4		45	38	33	106	98	--	--	--	49	49	69	56	28	48	76
4.5		--	37	48	--	60	--	--	--	--	--	--	82	--	46	47
5		43	36	51	--	62	--	--	--	--	--	--	--	48	51	39
5.5		40	34	36	--	92	--	--	--	--	--	108	72	38	40	35
6		37	32	46	87	89	--	--	--	31	--	65	52	36	37	44
6.5		36	30	50	--	48	--	--	--	59	91	48	54	33	41	30
7		41	46	39	--	48	--	--	--	42	42	51	42	40	37	36
7.5		52	41	45	--	46	--	--	--	97	44	42	42	39	39	41
8		49	44	45	99	57	--	--	--	61	43	50	41	44	38	41
8.5		--	--	42	--	--	--	--	--	--	--	--	--	--	--	--
9		--	38	32	--	--	--	--	--	--	--	--	39	--	--	--
9.5		--	37	38	--	52	--	--	--	61	--	31	36	--	--	--
10		--	37	36	233	47	--	--	--	40	38	34	71	37	--	--
10.5		51	38	42	--	36	--	--	--	21	49	49	35	33	--	38
11		35	34	36	--	41	--	--	--	28	37	33	41	40	--	27
11.5		46	53	48	--	34	--	--	--	33	48	32	43	30	--	37
12		41	44	43	97	37	--	--	--	49	49	35	--	51	--	30
12.5		--	--	39	--	--	--	--	--	--	--	--	52	--	--	--
13		--	--	32	--	59	--	--	--	--	--	46	36	--	--	--
13.5		51	37	34	--	67	--	--	--	47	36	39	55	36	--	--
14		38	40	34	31	58	--	--	--	47	37	38	42	36	--	--
14.5		49	54	50	--	58	--	--	--	20	34	36	39	26	--	--
15		46	35	51	--	44	--	--	--	52	45	45	42	32	--	--
15.5		40	28	37	--	47	--	--	--	43	37	39	27	35	--	--
16		69	39	38	59	39	--	--	--	38	30	39	38	38	--	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5		--	--	--	--	--	--	--	37	46	47	25	57	39	--	--
18		--	--	--	98	--	--	--	40	41	65	31	43	34	--	--
18.5		--	--	--	--	--	--	--	60	23	25	41	49	43	--	--
19		--	--	--	--	--	--	--	35	38	52	24	36	22	--	--
19.5		--	--	--	--	--	--	--	33	37	55	45	58	36	--	--
20		--	--	--	52	--	--	--	51	38	35	36	52	36	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-12	U-13	U-14	U-15	U-16a	U-16b	U-16c	U-16d	U-17	U-18	U-19	U-20	U-21	U-22	U-23
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	69	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	55	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	72	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	71	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	74	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	108	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	61	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	58	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	44	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	105	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

	Sample ID	U-24	U-25	U-26	U-27	U-27b	U-28	U-29	U-30	U-31	U-31b	U-32	U-33	U-33b	U-34	U-35b
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		35	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		41	--	35	--	--	--	49	--	30	--	--	--	--	--	59
1.5		34	35	42	--	--	37	35	44	43	--	38	54	--	--	70
2		56	53	62	39	--	39	45	43	30	--	35	98	--	47	39
2.5		37	48	46	186	--	40	26	35	45	--	104	68	--	48	39
3		62	37	81	104	--	30	64	35	44	--	95	32	--	108	37
3.5		--	30	187	94	--	36	66	43	68	--	26	38	--	140	51
4		--	53	133	71	--	50	43	40	45	--	45	47	--	116	34
4.5		--	--	--	134	--	--	--	42	--	--	37	47	--	--	37
5		--	--	51	48	--	--	49	52	--	--	44	44	--	66	31
5.5		48	37	45	51	--	86	71	33	--	--	44	36	--	38	43
6		33	45	55	48	--	66	52	37	--	--	41	43	--	45	30
6.5		46	50	49	48	--	73	65	34	--	--	42	53	--	38	34
7		60	34	35	43	--	85	55	35	53	--	27	52	--	38	41
7.5		40	41	46	44	--	54	39	33	57	--	43	45	--	52	32
8		40	28	38	64	--	36	49	35	41	--	38	29	--	40	--
8.5		--	--	--	--	--	--	--	--	--	--	--	32	--	--	31
9		46	36	57	--	--	--	--	--	--	--	--	38	--	--	38
9.5		45	33	48	39	--	--	--	--	--	--	40	42	--	73	50
10		49	36	30	49	48	--	--	--	--	--	37	37	--	43	44
10.5		35	31	44	--	58	--	--	--	49	--	41	44	--	41	41
11		37	28	39	--	47	--	--	--	49	--	45	20	--	39	41
11.5		49	22	30	--	50	--	--	--	136	--	38	29	--	47	33
12		37	42	32	--	43	--	--	--	103	--	29	33	--	21	42
12.5		--	41	--	--	--	--	--	--	97	--	--	--	--	--	33
13		--	41	--	--	--	--	--	--	56	--	--	--	--	--	--
13.5		--	--	--	--	--	--	--	--	35	--	27	--	--	43	--
14		--	--	--	--	--	--	--	--	45	--	32	40	--	40	34
14.5		--	--	--	--	--	--	--	--	29	--	51	36	--	46	38
15		--	--	--	--	--	--	--	--	43	--	38	33	--	47	36
15.5		--	--	--	--	--	--	--	--	45	--	49	29	--	36	43
16		--	--	--	--	--	--	--	--	53	--	49	45	45	--	40
16.5		--	--	--	--	--	--	--	--	45	--	--	--	57	--	--
17		--	--	--	--	--	--	--	--	37	--	--	--	53	--	--
17.5		--	--	--	--	--	--	--	--	39	55	--	--	36	--	36
18		--	--	--	--	--	--	--	--	37	51	29	--	39	29	45
18.5		--	--	--	--	--	--	--	--	--	25	35	--	44	46	55
19		--	--	--	--	--	--	--	--	--	48	37	--	37	29	57
19.5		--	--	--	--	--	--	--	--	--	35	39	--	38	38	39
20		--	--	--	--	--	--	--	--	--	46	41	--	25	38	33

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-24	U-25	U-26	U-27	U-27b	U-28	U-29	U-30	U-31	U-31b	U-32	U-33	U-33b	U-34	U-35b
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-36	U-37	U-38	U-39	U-40	U-41	U-42	U-43	U-44	U-45	U-46	U-47	U-48A	U-48B	U-48C
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	37	44	--	--	--	--	--	--	--	--	293	--	44
1		--	--	72	54	--	39	64	--	--	--	--	--	191	--	53
1.5		--	--	47	67	32	40	--	--	42	--	--	--	101	47	31
2		50	--	47	39	37	33	174	37	49	--	--	25	39	43	52
2.5		--	38	52	32	31	41	--	137	54	--	28	44	--	39	--
3		--	158	31	37	37	71	73	65	38	--	280	47	--	38	--
3.5		--	302	28	37	29	62	--	56	68	--	384	47	--	32	--
4		49	249	44	27	33	33	111	41	56	--	110	41	--	33	--
4.5		--	--	32	54	33	34	--	--	--	--	114	--	--	52	--
5		--	--	42	53	35	42	--	--	--	--	--	--	--	42	36
5.5		--	--	28	92	28	32	--	--	--	--	61	--	--	48	39
6		55	56	30	83	23	30	48	--	39	--	44	--	--	33	35
6.5		--	48	41	81	46	37	--	30	50	--	53	33	--	48	44
7		--	46	38	72	39	37	69	40	37	--	60	48	--	39	47
7.5		--	35	45	52	35	53	--	37	38	--	44	44	--	35	38
8		43	25	40	43	26	48	50	30	48	--	40	47	--	36	33
8.5		--	--	40	--	36	--	--	--	--	--	--	43	--	--	--
9		--	--	58	--	46	37	--	--	--	--	62	52	--	--	--
9.5		--	--	47	--	61	36	--	--	--	--	33	55	--	--	--
10		40	36	50	--	48	48	44	--	--	--	43	55	--	--	--
10.5		--	35	39	--	34	36	--	52	--	--	30	31	--	--	--
11		--	47	45	--	31	33	54	27	--	--	47	25	--	--	--
11.5		--	35	39	--	40	47	--	31	--	--	20	52	--	--	--
12		75	34	39	--	32	51	53	32	34	--	27	21	--	--	--
12.5		--	--	32	--	--	--	--	--	--	--	--	--	--	--	--
13		--	--	41	--	--	47	--	--	--	--	63	41	--	--	--
13.5		--	--	41	--	28	38	--	--	--	--	71	31	--	--	--
14		59	37	32	--	40	30	47	41	34	--	28	46	--	--	--
14.5		--	40	35	--	44	46	--	33	48	--	27	35	--	--	--
15		--	29	44	--	40	42	38	30	34	--	41	27	--	--	--
15.5		--	46	52	--	60	22	--	45	46	--	33	30	--	--	--
16		70	43	31	--	36	--	58	31	35	--	31	37	--	--	--
16.5		--	78	39	--	--	--	--	--	--	--	--	--	--	--	--
17		--	37	29	--	--	--	123	--	--	--	--	--	--	--	--
17.5		--	--	46	--	44	46	--	--	49	--	--	46	--	--	--
18		67	36	48	--	32	31	91	--	37	--	--	30	--	--	--
18.5		--	36	30	--	28	29	--	29	32	--	39	39	--	--	--
19		--	30	64	--	38	32	--	50	55	--	45	24	--	--	--
19.5		--	39	44	--	32	38	--	33	31	--	41	36	--	--	--
20		65	39	43	--	--	25	152	23	41	--	32	34	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-36	U-37	U-38	U-39	U-40	U-41	U-42	U-43	U-44	U-45	U-46	U-47	U-48A	U-48B	U-48C
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		71	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		67	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		60	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		78	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		71	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		75	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		76	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		63	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		56	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		56	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-48D	U-48E	U-49	U-50	U-51	U-52	U-53	U-54	U-55	U-56	U-57	U-58	U-59	U-60	U-61
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		44	37	--	--	--	--	--	--	--	--	--	--	51	--	50
1		30	39	--	--	--	--	--	--	60	--	36	--	53	--	62
1.5		37	38	--	--	--	36	--	--	53	34	48	38	83	--	67
2		30	51	27	44	--	53	--	63	43	43	37	51	43	47	59
2.5		40	46	37	38	37	36	31	86	49	32	50	68	72	47	61
3		44	40	38	32	51	25	41	127	55	30	34	52	60	48	52
3.5		46	44	36	31	31	50	37	77	47	22	32	43	44	30	51
4		35	42	45	39	43	33	35	60	42	49	31	52	53	36	48
4.5		48	42	41	--	37	--	--	--	--	--	29	47	39	50	51
5		26	33	44	47	40	36	26	--	--	48	32	47	30	35	54
5.5		36	45	36	36	44	47	32	48	44	46	29	42	37	51	33
6		47	45	24	33	28	38	36	43	40	49	41	43	38	40	50
6.5		26	36	38	45	48	51	31	44	38	43	32	38	44	40	51
7		46	37	23	43	28	22	39	45	31	35	24	49	41	36	57
7.5		34	42	47	28	42	48	54	30	33	31	24	63	52	42	44
8		26	28	39	31	41	42	41	36	36	43	50	48	47	33	42
8.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9		--	--	35	33	34	37	28	--	--	39	--	--	--	--	--
9.5		--	--	43	39	46	44	44	47	31	51	41	--	--	--	--
10		--	--	25	41	28	48	45	45	27	43	45	--	--	--	--
10.5		--	--	34	49	40	28	29	44	41	38	42	--	--	--	--
11		--	--	47	28	45	27	32	62	35	36	39	--	--	--	--
11.5		--	--	39	31	34	38	36	42	50	43	41	--	--	--	--
12		--	--	31	41	40	43	37	43	43	28	33	--	--	--	--
12.5		--	--	--	--	--	--	--	--	--	47	--	--	--	--	--
13		--	--	--	--	28	29	50	--	--	43	--	--	--	--	--
13.5		--	--	--	--	39	40	33	48	44	46	43	--	--	--	--
14		--	--	--	--	32	38	32	29	35	34	29	--	--	--	--
14.5		--	--	--	44	38	34	41	36	39	36	32	--	--	--	--
15		--	--	--	26	40	42	27	35	39	33	37	--	--	--	--
15.5		--	--	--	25	31	48	40	41	33	35	50	--	--	--	--
16		--	--	--	46	32	31	37	41	42	25	60	--	--	--	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	36	--	--	--	--	--	--	--	--	--
17.5		--	--	36	32	32	41	--	--	40	--	46	--	--	--	--
18		--	--	28	37	43	35	43	30	61	41	27	--	--	--	--
18.5		--	--	28	36	29	44	54	35	40	36	27	--	--	--	--
19		--	--	36	38	33	35	61	36	41	43	37	--	--	--	--
19.5		--	--	43	41	39	43	38	44	51	33	29	--	--	--	--
20		--	--	35	39	38	31	43	41	34	27	32	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-48D	U-48E	U-49	U-50	U-51	U-52	U-53	U-54	U-55	U-56	U-57	U-58	U-59	U-60	U-61
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

	Sample ID	U-62	U-63	U-64	U-65a	U-65b	U-66	U-67	U-68	U-69	U-70	U-71	U-72	U-73	U-74	U-74b
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		38	37	39	45	28	--	--	--	--	--	50	--	--	37	--
1		44	46	59	42	39	--	37	--	40	--	34	--	--	54	--
1.5		64	36	43	36	55	55	46	43	37	31	43	--	38	55	--
2		48	32	59	29	32	36	195	41	38	48	37	30	58	81	--
2.5		68	46	52	--	46	53	313	152	62	62	41	42	76	37	--
3		50	42	85	--	49	57	128	163	47	47	44	47	49	45	--
3.5		62	46	66	--	44	47	59	102	42	46	66	46	81	31	--
4		39	45	55	--	50	43	56	76	35	49	43	43	64	37	--
4.5		34	41	--	--	--	41	48	50	45	--	53	--	43	--	--
5		51	47	--	--	34	47	35	50	41	39	41	--	54	78	--
5.5		38	45	45	--	36	57	33	46	55	43	42	--	50	64	--
6		43	31	37	--	31	45	64	38	38	38	45	35	51	43	--
6.5		37	40	50	--	37	29	36	56	43	38	51	38	53	49	--
7		37	52	38	--	52	61	33	40	50	36	35	38	34	53	--
7.5		32	46	27	--	57	48	58	44	42	52	45	55	26	50	--
8		38	50	37	--	34	53	35	50	45	71	38	39	34	37	--
8.5		--	--	51	--	--	--	--	--	--	--	--	--	--	36	--
9		--	--	28	--	--	--	--	--	--	--	--	--	--	68	--
9.5		--	--	36	--	41	--	--	--	--	--	--	--	--	49	--
10		--	--	47	--	37	--	--	--	--	--	--	--	--	46	--
10.5		--	--	42	--	35	--	--	--	--	--	--	--	--	50	--
11		--	--	38	--	35	--	--	--	--	--	--	--	--	51	--
11.5		--	--	33	--	39	--	--	--	--	--	--	--	--	48	--
12		--	--	35	--	46	--	--	--	--	--	--	--	--	40	--
12.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13		--	--	--	--	--	--	--	--	--	--	--	--	--	--	42
13.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	43
14		--	--	--	--	--	--	--	--	--	--	--	--	--	--	44
14.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	30
15		--	--	--	--	--	--	--	--	--	--	--	--	--	--	47
15.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	53
16		--	--	--	--	--	--	--	--	--	--	--	--	--	--	54
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18		--	--	--	--	--	--	--	--	--	--	--	--	--	--	46
18.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	33
19		--	--	--	--	--	--	--	--	--	--	--	--	--	--	32
19.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	44
20		--	--	--	--	--	--	--	--	--	--	--	--	--	--	38

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-62	U-63	U-64	U-65a	U-65b	U-66	U-67	U-68	U-69	U-70	U-71	U-72	U-73	U-74	U-74b
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-75	U-75b	U-75c	U-75d	U-75e	U-76	U-77	U-78	U-79c	U-80	U-81	U-82	U-83	U-84	U-85
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	--	--	--	42	--	--	--	--	--	--
1		35	32	35	42	--	40	44	--	51	--	--	27	60	--	--
1.5		36	46	46	37	40	42	51	--	91	31	--	61	45	--	35
2		67	61	39	37	51	45	40	--	96	40	34	53	57	38	44
2.5		50	40	59	34	42	33	33	31	92	27	34	56	47	37	153
3		113	98	50	50	41	68	39	51	74	44	37	41	108	60	36
3.5		48	72	33	61	53	42	48	48	111	39	29	53	31	48	41
4		60	60	47	50	66	40	50	45	33	31	45	41	51	51	44
4.5		--	--	40	--	--	35	--	--	--	--	--	--	--	60	--
5		--	--	72	--	--	36	49	35	39	--	--	--	--	60	--
5.5		--	--	84	--	--	16	40	38	45	--	40	30	65	47	35
6		--	71	82	--	--	41	48	36	52	--	34	37	45	36	34
6.5		88	40	71	59	--	33	33	44	44	--	37	26	45	38	47
7		48	70	45	92	33	36	34	42	44	--	33	38	38	34	34
7.5		187	--	50	71	53	40	40	17	35	37	42	32	31	60	42
8		60	--	50	40	54	47	44	28	39	60	42	30	26	33	48
8.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9		--	--	--	--	--	--	--	--	--	--	--	39	--	--	--
9.5		--	--	--	70	--	--	--	--	--	--	--	37	39	--	--
10		--	--	--	68	--	--	--	--	--	--	--	46	31	--	--
10.5		--	--	--	--	--	--	--	--	--	--	--	32	32	--	--
11		--	--	--	--	--	--	--	--	--	--	--	31	35	--	--
11.5		--	--	--	--	55	--	--	--	--	--	--	44	36	--	--
12		--	--	--	--	48	--	--	--	--	--	--	47	28	--	--
12.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
15		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
15.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
20		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

[redacted]

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

	Sample ID	U-75	U-75b	U-75c	U-75d	U-75e	U-76	U-77	U-78	U-79c	U-80	U-81	U-82	U-83	U-84	U-85
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

	Sample ID	U-86a	U-86b	U-87	U-88	U-89	U-89b	U-90	U-91	U-92	U-93	U-94	U-95	U-96	U-96b	U-97
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		--	--	--	--	--	--	54	--	--	--	--	31	--	--	39
1.5		--	--	--	--	45	--	45	--	--	46	--	60	--	58	46
2		--	32	30	44	68	--	64	33	37	55	36	72	--	62	51
2.5		36	52	43	35	41	--	27	39	49	69	56	77	--	52	45
3		59	55	171	26	41	54	36	96	37	55	55	65	49	61	43
3.5		49	41	41	42	57	43	41	73	54	43	45	123	60	47	48
4		47	54	33	25	38	30	27	47	43	46	39	35	42	44	51
4.5		--	--	38	--	--	--	--	--	--	--	--	--	--	--	36
5		--	54	35	--	--	--	--	--	--	--	--	--	--	--	37
5.5		--	33	28	--	--	45	--	--	--	35	--	31	--	31	39
6		--	33	48	38	--	37	--	--	--	47	43	30	--	42	39
6.5		--	41	34	38	--	44	--	--	27	52	37	39	40	35	37
7		--	37	33	39	--	49	--	--	39	37	55	53	54	30	37
7.5		--	35	33	38	--	38	--	--	49	37	36	48	42	37	34
8		47	44	39	38	53	53	--	--	43	49	36	31	41	45	41
8.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9		--	31	--	--	--	--	--	--	--	49	--	--	--	40	41
9.5		--	31	--	--	--	--	--	--	--	41	38	40	--	42	46
10		--	53	--	--	--	--	--	--	59	45	35	50	--	50	41
10.5		--	34	--	--	--	--	--	--	48	33	25	56	--	52	40
11		53	34	--	--	--	--	--	--	39	49	37	50	--	40	42
11.5		39	40	--	--	--	--	--	--	51	35	36	47	--	38	43
12		27	35	--	--	--	--	--	--	39	44	29	51	--	33	37
12.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13		--	--	--	--	--	--	--	--	--	--	--	42	--	46	33
13.5		--	35	--	--	--	--	--	--	23	23	--	41	--	34	34
14		--	44	--	--	--	--	--	--	44	46	--	50	--	42	40
14.5		--	38	--	--	--	--	--	--	37	36	--	32	--	38	36
15		--	36	--	--	--	--	--	--	49	29	--	37	--	27	38
15.5		--	37	--	--	--	--	--	--	43	35	--	48	--	39	47
16		--	--	--	--	--	--	--	--	40	41	--	39	--	49	42
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5		--	--	--	--	--	--	--	--	27	37	--	44	--	35	28
18		--	34	--	--	--	--	--	--	38	24	--	50	--	30	41
18.5		--	50	--	--	--	--	--	--	33	51	--	57	--	47	31
19		--	46	--	--	--	--	--	--	30	40	--	50	--	40	56
19.5		--	34	--	--	--	--	--	--	60	30	--	46	--	34	30
20		--	46	--	--	--	--	--	--	60	37	--	47	--	43	37

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

	Sample ID	U-86a	U-86b	U-87	U-88	U-89	U-89b	U-90	U-91	U-92	U-93	U-94	U-95	U-96	U-96b	U-97
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

	Sample ID	U-98	U-99	U-100	U-100b	U-100c	U-101	U-102	U-103	U-104	U-105	U-106	U-107b	U-108	U-109	U-110
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	43
1		--	--	--	--	--	--	--	--	47	55	--	--	41	--	49
1.5		--	--	--	--	--	--	--	48	63	55	50	--	67	--	59
2		41	40	--	--	--	27	48	48	59	32	31	--	44	49	34
2.5		58	80	--	59	39	42	48	73	40	49	40	40	60	58	47
3		45	62	44	69	42	43	35	55	49	60	51	55	54	41	46
3.5		45	76	66	38	66	35	35	63	45	35	29	53	54	61	43
4		44	53	65	60	45	47	53	23	54	46	33	57	78	42	30
4.5		41	--	--	--	--	--	--	--	--	47	47	--	--	--	--
5		43	--	--	--	--	--	32	--	--	28	32	--	--	--	--
5.5		37	25	--	--	--	--	22	--	34	35	38	--	46	35	--
6		46	39	--	--	--	--	28	37	60	36	39	--	34	25	40
6.5		47	46	--	--	32	42	29	60	37	32	44	--	47	37	35
7		41	34	--	--	33	45	29	36	33	36	46	49	39	32	31
7.5		31	45	--	--	56	55	45	45	56	35	38	56	31	38	37
8		37	48	--	--	55	33	47	42	61	35	37	53	41	42	35
8.5		--	--	--	--	--	--	--	--	--	--	42	--	--	--	44
9		47	--	--	--	--	38	--	--	--	54	31	--	--	--	24
9.5		51	--	--	--	--	54	--	--	--	49	38	45	40	35	37
10		30	--	--	--	--	36	--	--	--	31	45	56	46	34	27
10.5		27	--	--	--	60	45	--	--	--	45	41	45	48	48	35
11		38	--	--	--	43	53	--	--	--	32	30	37	38	50	50
11.5		44	76	--	--	61	56	--	--	--	61	35	28	35	34	36
12		33	60	--	--	27	37	--	--	--	39	44	45	38	48	38
12.5		35	--	--	--	--	--	--	--	--	--	--	--	--	29	--
13		30	--	--	--	--	--	--	--	--	--	43	--	45	28	--
13.5		60	48	--	--	45	--	--	--	--	--	38	51	45	44	--
14		46	41	--	--	37	--	--	--	--	--	33	22	39	42	--
14.5		52	43	--	--	41	--	--	--	--	--	34	36	39	33	--
15		41	38	--	--	35	--	--	--	--	--	29	39	45	35	--
15.5		36	41	--	--	47	--	--	--	--	--	52	41	44	44	--
16		36	39	--	--	36	--	--	--	--	--	45	38	49	39	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	--	--	--	42	--	50	34	--
17.5		--	--	--	--	--	--	--	--	--	--	44	27	37	41	--
18		36	49	--	--	76	--	--	--	--	--	42	45	50	36	--
18.5		56	55	--	--	73	--	--	--	--	--	36	41	31	25	--
19		35	57	--	--	76	--	--	--	--	--	40	50	37	29	--
19.5		38	39	--	--	65	--	--	--	--	--	37	34	42	27	--
20		36	36	--	--	38	--	--	--	--	--	36	29	41	43	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-98	U-99	U-100	U-100b	U-100c	U-101	U-102	U-103	U-104	U-105	U-106	U-107b	U-108	U-109	U-110
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-111	U-112	U-113	U-113b	U-114	U-115	U-116	U-117	U-118	U-119	U-120	U-121	U-122	U-123	U-124
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	--	--	--	--	--	--	--	54	--	--
1		--	--	--	41	50	--	40	--	--	--	--	--	39	--	--
1.5		--	54	--	63	85	--	42	43	40	--	--	37	45	--	41
2		61	43	--	55	123	--	38	82	52	37	46	45	28	--	40
2.5		61	58	--	42	127	72	51	58	45	48	38	36	39	57	46
3		47	60	55	46	96	62	27	48	49	38	44	34	33	52	37
3.5		62	45	49	45	143	57	34	43	46	44	42	38	39	61	40
4		49	41	38	44	198	38	40	37	48	45	43	38	39	36	36
4.5		--	--	34	--	--	52	44	--	--	--	--	52	--	--	--
5		--	48	48	--	--	52	37	49	--	--	--	33	39	38	32
5.5		--	34	38	--	--	41	42	46	--	40	50	47	31	29	36
6		43	44	58	--	--	34	41	39	--	49	39	40	42	45	31
6.5		35	33	38	--	225	40	35	38	45	--	43	33	42	43	43
7		40	44	40	--	244	38	47	36	45	--	42	38	29	44	35
7.5		44	46	58	--	119	49	32	39	63	--	50	34	34	53	37
8		37	30	43	--	68	28	42	49	83	--	36	34	42	--	42
8.5		--	36	--	--	--	--	--	--	--	53	--	36	--	--	--
9		--	62	41	--	48	53	32	--	--	43	--	43	26	--	--
9.5		23	39	62	--	80	37	48	35	35	--	56	29	42	--	--
10		34	40	47	--	42	38	40	33	33	--	46	27	31	--	--
10.5		49	60	58	--	38	24	45	43	31	--	44	27	30	57	--
11		33	44	43	--	42	32	53	34	33	--	35	36	31	32	--
11.5		46	46	40	--	43	26	45	40	35	--	33	43	43	35	--
12		45	56	--	--	38	47	45	50	28	30	53	37	40	37	45
12.5		--	--	32	--	--	--	--	--	33	42	--	--	--	--	--
13		--	34	42	--	56	--	37	--	30	35	37	34	53	--	--
13.5		--	41	40	--	62	32	29	50	39	24	47	22	44	--	41
14		--	37	32	--	49	33	37	37	44	30	34	35	46	--	29
14.5		--	32	34	--	46	40	34	25	37	29	45	42	37	--	30
15		--	54	36	--	43	29	42	33	38	34	33	39	39	--	30
15.5		--	32	38	--	--	42	39	42	29	--	43	37	36	--	32
16		--	46	30	--	--	36	59	47	25	40	36	23	30	--	43
16.5		--	--	--	--	50	53	--	--	--	39	--	--	--	--	--
17		--	--	--	--	47	32	--	--	35	36	44	--	--	--	--
17.5		--	30	37	--	34	32	--	37	39	43	60	36	--	--	--
18		--	48	34	--	57	38	38	34	37	37	51	46	41	--	48
18.5		--	32	41	--	66	28	46	45	26	42	38	43	37	--	41
19		--	46	37	--	41	32	43	37	39	44	44	41	40	--	48
19.5		--	29	31	--	47	39	22	36	40	--	44	38	36	--	33
20		--	41	28	--	51	36	44	47	33	--	30	37	42	--	47

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

	Sample ID	U-111	U-112	U-113	U-113b	U-114	U-115	U-116	U-117	U-118	U-119	U-120	U-121	U-122	U-123	U-124
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	31	36	--	52	--	--	--	--
22		--	--	--	--	--	--	39	45	31	--	42	--	--	--	46
22.5		--	--	--	--	--	--	31	41	39	--	37	--	--	--	29
23		--	--	--	--	--	--	43	30	43	--	36	--	--	--	37
23.5		--	--	--	--	--	--	33	47	64	--	39	--	--	--	37
24		--	--	--	--	--	--	33	43	44	--	48	--	--	--	53
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	41	--	31	--	--	--	--
25.5		--	--	--	--	--	--	38	45	33	--	38	--	--	--	29
26		--	--	--	--	--	--	40	31	33	--	55	--	--	--	40
26.5		--	--	--	--	--	--	38	35	33	--	38	--	--	--	37
27		--	--	--	--	--	--	32	46	35	--	44	--	--	--	38
27.5		--	--	--	--	--	--	42	38	38	--	42	--	--	--	47
28		--	--	--	--	--	--	46	19	23	--	35	--	--	--	33
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	51	--	--	--	42	--	--	--	--
29.5		--	--	--	--	--	--	62	25	--	--	36	--	--	--	36
30		--	--	--	--	--	--	33	37	45	--	36	--	--	--	28
30.5		--	--	--	--	--	--	30	45	39	--	48	--	--	--	37
31		--	--	--	--	--	--	42	45	39	--	40	--	--	--	37
31.5		--	--	--	--	--	--	41	37	26	--	29	--	--	--	29
32		--	--	--	--	--	--	39	26	35	--	44	--	--	--	46
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	44	--	--	--	--	--	--
33.5		--	--	--	--	--	--	34	--	50	--	--	--	--	--	--
34		--	--	--	--	--	--	31	32	38	--	--	--	--	--	41
34.5		--	--	--	--	--	--	40	36	32	--	25	--	--	--	30
35		--	--	--	--	--	--	40	28	40	--	34	--	--	--	37
35.5		--	--	--	--	--	--	27	38	46	--	51	--	--	--	40
36		--	--	--	--	--	--	47	35	29	--	26	--	--	--	48
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	35	--	47	--	--	--	--
37.5		--	--	--	--	--	--	44	49	34	--	32	--	--	--	39
38		--	--	--	--	--	--	27	35	36	--	42	--	--	--	42
38.5		--	--	--	--	--	--	34	35	51	--	45	--	--	--	55
39		--	--	--	--	--	--	42	31	37	--	39	--	--	--	39
39.5		--	--	--	--	--	--	34	31	25	--	36	--	--	--	37
40		--	--	--	--	--	--	40	56	26	--	48	--	--	--	60

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-125	U-126	U-127	U-128	U-129	U-130	U-131	U-132	U-133	U-134	U-135	U-136	U-137	U-138	U-139
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		55	--	--	--	--	--	47	--	--	--	--	--	35	43	29
1.5		32	--	44	38	35	83	49	--	37	40	--	33	50	36	55
2		36	42	40	51	50	37	34	37	35	56	44	43	68	38	48
2.5		43	41	35	44	49	32	49	33	60	36	46	57	52	56	31
3		41	70	32	41	39	38	58	38	48	28	27	51	44	26	38
3.5		54	35	43	43	39	39	47	43	44	43	47	52	50	51	46
4		53	37	41	48	41	28	38	52	26	33	36	35	40	49	31
4.5		--	--	--	--	--	--	--	--	29	--	--	--	--	--	--
5		--	--	47	--	52	29	--	40	28	36	--	--	--	--	--
5.5		--	--	42	--	55	50	47	52	38	45	--	24	--	30	--
6		46	--	29	47	50	51	41	37	36	40	--	44	38	41	40
6.5		51	--	52	50	74	43	42	47	37	34	57	27	35	41	33
7		44	--	37	42	53	32	34	46	34	37	54	41	32	37	53
7.5		35	--	34	36	43	42	40	28	36	33	56	43	51	40	41
8		45	46	49	44	26	36	42	62	44	44	52	36	30	50	45
8.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9		--	--	34	--	--	23	--	--	--	--	--	--	--	--	--
9.5		--	--	35	--	--	41	--	--	--	36	--	--	--	--	--
10		--	42	50	56	--	40	41	--	32	35	--	--	--	--	--
10.5		--	38	53	46	--	47	35	43	29	42	44	--	--	--	--
11		38	30	33	33	40	29	25	48	34	52	51	--	--	--	--
11.5		28	51	45	46	47	30	47	34	46	47	47	--	--	--	--
12		37	31	41	36	41	36	25	66	39	36	29	--	--	--	--
12.5		--	--	--	--	--	--	--	60	--	--	--	--	--	--	--
13		--	--	33	--	--	28	--	163	--	--	--	--	--	--	--
13.5		--	--	36	--	--	38	--	124	41	45	45	--	--	--	--
14		--	--	39	50	39	39	57	108	38	44	39	--	--	--	--
14.5		35	--	45	31	30	45	26	197	38	36	44	--	--	--	--
15		42	--	39	49	29	45	49	49	31	27	41	--	--	--	--
15.5		55	--	42	39	40	28	33	45	40	27	44	--	--	--	--
16		36	--	32	52	26	24	37	44	41	36	35	--	--	--	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	42	--	--	--	--	--	--	--
17.5		34	--	32	--	49	--	--	47	35	--	--	--	--	--	--
18		36	--	33	--	46	--	41	40	42	25	39	--	--	--	--
18.5		35	--	24	36	52	--	46	53	49	42	29	--	--	--	--
19		28	--	48	48	45	--	35	43	42	41	36	--	--	--	--
19.5		36	--	35	33	48	--	46	48	34	42	36	--	--	--	--
20		47	--	47	47	56	37	44	51	43	39	49	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-125	U-126	U-127	U-128	U-129	U-130	U-131	U-132	U-133	U-134	U-135	U-136	U-137	U-138	U-139
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	29	--	72	--	--	--	--	--	--	--
21.5		--	--	--	--	--	34	--	48	--	--	--	--	--	--	--
22		--	--	--	42	--	26	60	50	38	--	--	--	--	--	--
22.5		--	--	--	36	--	47	60	46	32	48	--	--	--	--	--
23		--	--	--	43	--	44	41	34	36	42	--	--	--	--	--
23.5		--	--	--	36	--	41	35	46	47	35	--	--	--	--	--
24		--	--	--	29	37	45	39	40	30	37	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	30	33	--	36	--	--	--	--	--	--
26		--	--	--	53	45	39	36	--	25	47	--	--	--	--	--
26.5		--	--	--	42	43	24	42	--	47	35	--	--	--	--	--
27		--	--	--	37	33	42	45	--	29	31	--	--	--	--	--
27.5		--	--	--	40	32	32	32	--	35	33	--	--	--	--	--
28		--	--	--	34	47	24	35	--	36	43	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	29	35	--	--	47	39	--	--	--	--	--
30		--	--	--	30	32	53	46	--	34	43	--	--	--	--	--
30.5		--	--	--	41	33	33	52	--	31	23	--	--	--	--	--
31		--	--	--	51	40	37	32	--	37	39	--	--	--	--	--
31.5		--	--	--	58	41	46	37	--	30	38	--	--	--	--	--
32		--	--	--	--	31	28	29	--	49	32	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	39	36	36	--	--	40	45	--	--	--	--	--
34		--	--	--	43	30	33	--	--	38	30	--	--	--	--	--
34.5		--	--	--	46	39	35	48	--	39	54	--	--	--	--	--
35		--	--	--	43	44	37	40	--	31	34	--	--	--	--	--
35.5		--	--	--	50	40	37	26	--	33	34	--	--	--	--	--
36		--	--	--	48	39	30	49	--	36	41	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	55	27	--	--	27	44	--	--	--	--	--
38		--	--	--	38	39	37	27	--	46	41	--	--	--	--	--
38.5		--	--	--	30	44	42	36	--	33	35	--	--	--	--	--
39		--	--	--	46	39	25	44	--	51	39	--	--	--	--	--
39.5		--	--	--	39	39	46	37	--	51	37	--	--	--	--	--
40		--	--	--	36	20	54	40	--	36	33	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-140	U-140B	U-141	U-142	U-143	U-144	U-145	U-146	U-147						
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min						
0		--	--	--	--	--	--	--	--	--						
0.5		--	--	--	--	--	--	--	--	--						
1		33	--	--	31	--	--	--	76	45						
1.5		30	47	--	38	36	--	34	45	65						
2		49	57	--	46	27	61	32	80	62						
2.5		46	39	37	49	35	53	41	74	51						
3		39	29	37	32	32	47	53	48	71						
3.5		35	53	46	23	41	36	44	50	40						
4		25	38	53	35	38	38	31	35	42						
4.5		--	41	--	--	--	--	--	--	--						
5		--	34	--	--	--	--	33	49	--						
5.5		--	25	41	--	--	--	37	63	--						
6		--	29	38	--	--	--	58	55	45						
6.5		--	47	37	--	--	--	28	54	69						
7		--	36	39	--	--	--	46	42	37						
7.5		--	39	41	--	--	--	32	52	43						
8		--	34	48	--	--	--	47	41	37						
8.5		--	--	--	--	--	--	--	--	--						
9		--	--	--	--	--	--	39	--	--						
9.5		--	--	--	--	--	--	27	--	41						
10		--	--	--	--	--	--	26	--	54						
10.5		--	--	--	--	--	--	32	--	35						
11		--	--	--	--	--	--	43	--	43						
11.5		--	--	--	--	--	--	32	--	39						
12		--	--	--	--	--	--	49	--	33						
12.5		--	--	--	--	--	--	--	--	--						
13		--	--	--	--	--	--	--	--	--						
13.5		--	--	--	--	--	--	35	--	43						
14		--	--	--	--	--	--	50	--	51						
14.5		--	--	--	--	--	--	35	--	36						
15		--	--	--	--	--	--	46	--	45						
15.5		--	--	--	--	--	--	38	--	47						
16		--	--	--	--	--	--	36	--	33						
16.5		--	--	--	--	--	--	--	--	--						
17		--	--	--	--	--	--	--	--	--						
17.5		--	--	--	--	--	--	--	--	--						
18		--	--	--	--	--	--	--	--	--						
18.5		--	--	--	--	--	--	32	--	--						
19		--	--	--	--	--	--	41	--	--						
19.5		--	--	--	--	--	--	39	--	--						
20		--	--	--	--	--	--	37	--	--						

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Alpha/Beta Field Screening

Sample ID		U-140	U-140B	U-141	U-142	U-143	U-144	U-145	U-146	U-147						
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min						
20.5		--	--	--	--	--	--	--	--	--						
21		--	--	--	--	--	--	--	--	--						
21.5		--	--	--	--	--	--	--	--	--						
22		--	--	--	--	--	--	--	--	--						
22.5		--	--	--	--	--	--	--	--	--						
23		--	--	--	--	--	--	--	--	--						
23.5		--	--	--	--	--	--	--	--	--						
24		--	--	--	--	--	--	--	--	--						
24.5		--	--	--	--	--	--	--	--	--						
25		--	--	--	--	--	--	--	--	--						
25.5		--	--	--	--	--	--	--	--	--						
26		--	--	--	--	--	--	--	--	--						
26.5		--	--	--	--	--	--	--	--	--						
27		--	--	--	--	--	--	--	--	--						
27.5		--	--	--	--	--	--	--	--	--						
28		--	--	--	--	--	--	--	--	--						
28.5		--	--	--	--	--	--	--	--	--						
29		--	--	--	--	--	--	--	--	--						
29.5		--	--	--	--	--	--	--	--	--						
30		--	--	--	--	--	--	--	--	--						
30.5		--	--	--	--	--	--	--	--	--						
31		--	--	--	--	--	--	--	--	--						
31.5		--	--	--	--	--	--	--	--	--						
32		--	--	--	--	--	--	--	--	--						
32.5		--	--	--	--	--	--	--	--	--						
33		--	--	--	--	--	--	--	--	--						
33.5		--	--	--	--	--	--	--	--	--						
34		--	--	--	--	--	--	--	--	--						
34.5		--	--	--	--	--	--	--	--	--						
35		--	--	--	--	--	--	--	--	--						
35.5		--	--	--	--	--	--	--	--	--						
36		--	--	--	--	--	--	--	--	--						
36.5		--	--	--	--	--	--	--	--	--						
37		--	--	--	--	--	--	--	--	--						
37.5		--	--	--	--	--	--	--	--	--						
38		--	--	--	--	--	--	--	--	--						
38.5		--	--	--	--	--	--	--	--	--						
39		--	--	--	--	--	--	--	--	--						
39.5		--	--	--	--	--	--	--	--	--						
40		--	--	--	--	--	--	--	--	--						

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-1	U-2	U-3	U-4	U-5a	U-5b	U-5c	U-6	U-6b	U-7	U-8	U-9	U-9b	U-10	U-11	U-12
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--								
0.5		--	--	4787	--	4580	--	--	4641	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
1		--	--	5954	--	5811	--	--	4469	--	--	--	--	--	--	--	--
1.5		4766	--	4908	4423	4829	--	--	4719	--	4903	4564	4734	--	--	--	--
2		7462	6305	4720	4462	4599	--	--	4532	--	5231	4985	4724	--	--	4688	--
2.5		7776	--	4888	4562	4714	--	--	4551	--	5218	5009	5138	--	--	4739	4727
3		6115	--	4569	4649	4661	--	--	4539	--	4774	4886	4856	--	--	4746	5006
3.5		5095	--	4773	4863	4455	--	--	4389	--	4836	4871	4842	--	--	4814	5499
4		4715	5063	4348	4646	--	--	--	4472	--	4894	4873	4734	--	--	4937	5417
4.5		4673	--	4424	4519	--	4519	--	--	--	4805	4628	4709	--	--	4883	4888
5		4528	--	4475	4430	--	4452	--	4623	--	4876	4781	4607	--	--	4965	4746
5.5		4429	--	4442	4689	--	4503	--	4626	--	4812	--	--	--	--	4826	--
6		4453	4590	4540	4416	--	4314	--	4480	--	4796	4798	4644	--	--	4817	4769
6.5		4484	--	4457	4365	--	4234	--	4511	--	4840	4846	4704	--	--	4885	4703
7		4423	--	4311	4433	--	4512	--	4675	--	4739	4712	4832	--	--	4734	4767
7.5		4444	--	4401	4415	--	4346	--	4466	--	4758	4666	4501	--	--	4821	4683
8		4449	4535	4457	4564	--	4534	--	4346	--	4799	4856	4795	--	--	4731	4702
8.5		--	--	4485	--	--	--	--	--	--	5050	4650	4788	--	--	4781	4707
9		--	--	4682	--	--	--	--	--	--	4855	4815	4664	--	--	4759	4566
9.5		--	--	4695	--	--	4571	--	--	--	--	--	--	--	--	--	--
10		--	4561	4484	--	--	4243	--	4279	--	--	--	--	--	--	--	--
10.5		--	--	4614	--	--	4669	--	4169	--	--	4809	--	--	--	4673	--
11		--	--	4503	--	--	4519	--	4346	--	--	4609	--	--	--	4847	--
11.5		--	--	4421	--	--	4266	--	4253	--	--	4674	4611	--	--	4876	4781
12		--	4355	4252	--	--	4362	--	4411	--	--	4586	4709	--	--	4910	4710
12.5		--	--	--	--	--	4417	--	--	--	--	4640	4643	--	--	4721	4945
13		--	--	--	--	--	4406	--	4366	--	--	4707	4558	--	--	4727	4736
13.5		--	--	4362	--	--	4521	--	4434	--	--	--	--	--	--	4827	--
14		--	4372	4405	--	--	4376	--	4329	--	--	4648	--	--	--	4772	--
14.5		--	--	4439	--	--	4393	--	4678	--	--	4763	--	--	--	4625	4812
15		--	--	4419	--	--	4653	--	4297	--	--	4671	--	--	--	4551	4577
15.5		--	--	4436	--	--	4582	--	4261	--	--	4662	--	--	--	4738	4929
16		--	4657	4337	--	--	4603	4673	4541	--	--	4540	4614	--	--	4663	4519
16.5		--	--	--	--	--	--	4697	--	--	--	4617	4733	--	--	4710	4745
17		--	--	--	--	--	--	4611	--	--	--	4533	4768	--	--	4836	4795
17.5		--	--	4342	--	--	--	4764	--	--	--	--	--	--	--	--	--
18		--	4379	4351	--	--	--	4670	--	--	--	--	--	--	--	--	--
18.5		--	--	4340	--	--	--	4711	--	--	--	--	--	--	--	--	--
19		--	--	4570	--	--	--	4787	--	4696	--	--	--	4660	--	--	--
19.5		--	--	4269	--	--	--	4815	--	4837	--	--	--	4670	--	--	--
20		--	4492	4521	--	--	--	4755	--	4778	--	--	--	4531	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-1	U-2	U-3	U-4	U-5a	U-5b	U-5c	U-6	U-6b	U-7	U-8	U-9	U-9b	U-10	U-11	U-12
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	4607	--	--	--	4677	--	--	--
21		--	--	--	--	--	--	--	--	4332	--	--	--	4441	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	4373	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	4569	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	4278	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	4443	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	4624	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	4453	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	4445	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	4567	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	4474	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	4519	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-13	U-14	U-15	U-16a	U-16b	U-16c	U-16d	U-17	U-18	U-19	U-20	U-21	U-22	U-23	U-24	U-25
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		4786	--	--	4334	--	--	--	--	--	--	--	--	4463	--	4496	--
1		5103	--	--	4771	--	--	--	--	--	4724	--	--	4437	4669	4700	--
1.5		5518	4974	--	4995	--	--	--	--	--	5130	4566	4920	4457	4931	4447	4417
2		6003	5538	5130	4788	--	--	--	--	4687	5122	4948	5195	4625	4934	4618	4694
2.5		5117	5258	--	4763	--	--	--	--	4915	5572	4970	4657	4649	5264	4750	5179
3		4971	4884	--	4784	--	--	--	4303	5078	6105	5101	4615	4475	5108	4782	4785
3.5		4712	4880	--	4899	--	--	--	4995	4981	5869	4958	4659	4742	5161	--	4783
4		4641	4870	4817	5315	--	--	--	4749	5077	5654	4820	4729	4729	5070	--	4617
4.5		4625	4711	--	4849	--	--	--	--	--	--	4677	--	4635	4785	--	--
5		4728	4764	--	5370	--	--	--	--	--	--	--	4653	4487	4671	--	--
5.5		4868	4881	--	5572	--	--	--	--	--	5286	4825	4641	4394	4558	4694	4589
6		4449	4874	4590	5215	--	--	--	4638	--	4966	4814	4512	4429	4649	4468	4538
6.5		4528	4829	--	5047	--	--	--	5032	5141	4647	4507	4777	4472	4780	4605	4440
7		4549	4606	--	4842	--	--	--	5188	4818	4714	4505	4633	4513	4658	4673	4675
7.5		4907	4731	--	4878	--	--	--	5157	4823	4536	4627	4741	4483	4697	4598	4635
8		4919	4693	5069	4653	--	--	--	5142	4725	4788	4440	4653	4555	4627	4506	4582
8.5		--	4873	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9		4930	4675	--	--	--	--	--	--	--	--	4569	--	--	--	4730	4509
9.5		4736	4687	--	4555	--	--	--	4809	--	4586	4698	--	--	--	4438	4435
10		4760	4758	4903	4440	--	--	--	4786	5028	4674	4676	4747	--	--	4656	4576
10.5		4688	4713	--	4526	--	--	--	4387	4996	4573	4573	4474	--	4642	4751	4546
11		4677	4746	--	4629	--	--	--	4565	4436	4645	4274	4560	--	4541	4542	4536
11.5		4765	4849	--	4447	--	--	--	4487	4533	4529	4453	4594	--	4657	4493	4744
12		4688	4767	4840	4411	--	--	--	4460	4765	4435	--	4660	--	4738	4693	4385
12.5		--	4630	--	--	--	--	--	--	--	--	4405	--	--	--	--	4506
13		--	4850	--	4666	--	--	--	--	--	4720	4375	--	--	--	--	4594
13.5		4671	4622	--	4678	--	--	--	4391	4761	4580	4471	4571	--	--	--	--
14		4908	4791	4457	4901	--	--	--	4375	4679	4300	4550	4648	--	--	--	--
14.5		4688	4597	--	4809	--	--	--	4390	4736	4493	4491	4531	--	--	--	--
15		4811	4769	--	4808	--	--	--	4401	4672	4550	4379	4448	--	--	--	--
15.5		4788	4592	--	4636	--	--	--	4606	4634	4385	4410	4574	--	--	--	--
16		4664	4853	4505	4556	--	--	--	4418	4553	4575	4415	4657	--	--	--	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5		--	--	--	--	--	--	4576	4660	4578	4608	4490	4494	--	--	--	--
18		--	--	4792	--	--	--	4502	4421	4620	4394	4473	4420	--	--	--	--
18.5		--	--	--	--	--	--	4712	4501	4623	4757	4349	4609	--	--	--	--
19		--	--	--	--	--	--	4558	4574	4717	4385	4355	4561	--	--	--	--
19.5		--	--	--	--	--	--	4645	4375	4618	4648	4543	4720	--	--	--	--
20		--	--	4452	--	--	--	4405	4520	4478	4670	4479	4520	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-13	U-14	U-15	U-16a	U-16b	U-16c	U-16d	U-17	U-18	U-19	U-20	U-21	U-22	U-23	U-24	U-25
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	4678	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	4497	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	4680	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	4653	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	4734	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	4669	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	4680	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	4493	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	4590	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	4723	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-26	U-27	U-27b	U-28	U-29	U-30	U-31	U-31b	U-32	U-33	U-33b	U-34	U-35b	U-36	U-37	U-38
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4662
1		4737	--	--	--	4875	--	4346	--	--	--	--	--	4493	--	--	4887
1.5		4806	--		4726	4892	4777	4606	--	4469	4585	--	--	4656	--	--	4609
2		4836	5158	--	4900	4810	4820	4498	--	4573	4911	--	4397	4583	5063	--	4606
2.5		4958	6337	--	4804	4730	4817	4826	--	5052	4837	--	4942	4622	--	4632	4462
3		5284	5558	--	4800	4699	4799	4710	--	5001	4505	--	5418	4532	--	6283	4496
3.5		6293	5231	--	4585	4692	4633	4563	--	4514	4393	--	6258	4581	--	8374	4599
4		6221	5018	--	4695	4833	4711	4586	--	4572	4488	--	5559	4581	4775	7157	4249
4.5		--	4801	--	--	--	4706	--	--	4399	4546	--	--	4501	--	--	4447
5		4989	4553	--	--	4645	4652	--	--	4616	4432	--	4757	4537	--	--	4580
5.5		4793	4623	--	4696	4611	4582	--	--	4569	4502	--	4796	4535	--	--	4481
6		4491	4452	--	4683	4686	4624	--	--	4585	4521	--	4447	4463	4752	4755	4526
6.5		4648	4689	--	4711	4743	4792	--	--	4475	4562	--	4516	4643	--	4711	4658
7		4692	4429	--	4731	4744	4766	4582	--	4237	4246	--	4554	4468	--	4819	4587
7.5		4588	4483	--	4744	4846	4426	4664	--	4339	4350	--	4508	4519	--	4635	4337
8		4603	4731	--	4793	4669	4757	4503	--	4369	4318	--	4488	--	4665	4642	4608
8.5		--	--	--	--	--	--	--	--	--	4380	--	--	4354	--	--	4335
9		4801	--	--	--	--	--	--	--	--	4443	--	--	4416	--	--	4551
9.5		4783	4517	--	--	--	--	--	--	4230	4349	--	4894	4349	--	--	4475
10		4719	4405	4576	--	--	--	--	--	4288	4492	--	4553	4371	4844	4876	4466
10.5		4492	--	4682	--	--	--	4588	--	4436	4419	--	4393	4683	--	4688	4438
11		4641	--	4607	--	--	--	4784	--	4416	4553	--	4433	4433	--	4577	4323
11.5		4558	--	4409	--	--	--	5690	--	4657	4632	--	4545	4475	--	4502	4381
12		4332	--	4532	--	--	--	4897	--	4348	4217	--	4470	4608	4935	4422	4347
12.5		--	--	--	--	--	--	5070	--	--	--	--	--	4462	--	--	4483
13		--	--	--	--	--	--	4876	--	--	--	--	--	--	--	--	4390
13.5		--	--	--	--	--	--	4689	--	4277	--	--	4503	--	--	--	4466
14		--	--	--	--	--	--	4564	--	4417	4737	--	4562	4449	5148	4894	4508
14.5		--	--	--	--	--	--	4806	--	4364	4844	--	4322	4321	--	4634	4378
15		--	--	--	--	--	--	4701	--	4534	4582	--	4649	4511	--	4384	4416
15.5		--	--	--	--	--	--	4511	--	4285	4800	--	4518	4523	--	4641	4373
16		--	--	--	--	--	--	4469	--	4410	4423	4744	--	4409	4861	4415	4711
16.5		--	--	--	--	--	--	4574	--	--	--	4953	--	--	--	4724	4428
17		--	--	--	--	--	--	4526	--	--	--	4664	--	--	--	4486	4576
17.5		--	--	--	--	--	--	4424	4733	--	--	4817	--	4541	--	--	4737
18		--	--	--	--	--	--	4416	4593	4479	--	4147	4399	4531	4585	4667	4497
18.5		--	--	--	--	--	--	--	4523	4228	--	4490	4428	4281	--	4464	4325
19		--	--	--	--	--	--	--	4563	4468	--	4518	4573	4368	--	4360	4638
19.5		--	--	--	--	--	--	--	4367	4455	--	4409	4289	4362	--	4534	4741
20		--	--	--	--	--	--	--	4428	4395	--	4350	4558	4620	4699	4439	4569

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-26	U-27	U-27b	U-28	U-29	U-30	U-31	U-31b	U-32	U-33	U-33b	U-34	U-35b	U-36	U-37	U-38
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	4848	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	4883	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	--	--	--	--	--	--	--	--	--	--	5034	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	--	--	--	--	--	--	--	--	--	--	4851	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	5080	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	4821	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	4841	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	4862	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	4932	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	4764	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-39	U-40	U-41	U-42	U-43	U-44	U-45	U-46	U-47	U-48A	U-48B	U-48C	U-48D	U-48E	U-49	U-50
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		4636	--	--	--	--	--	--	--	--	7094	--	4563	4340	4448	--	--
1		4822	--	4481	4792	--	--	--	--	--	7045	--	4646	4479	4491	--	--
1.5		4840	4535	4420	--	--	4400	--	--	--	5898	4555	4681	4403	4419	--	--
2		4671	4534	4488	5647	4708	4618	--	--	4628	4727	4599	4551	4387	4494	4692	4572
2.5		4614	4462	4671	--	5594	4585	--	5134	4828	--	4548	--	4500	4375	4478	4483
3		4290	4379	5058	4731	5114	4612	--	8223	4741	--	4555	--	4617	4776	4520	4538
3.5		4536	4583	4694	--	4831	4817	--	8535	4784	--	4641	--	4491	4571	4641	4824
4		4486	4385	4757	4966	4784	4724	--	5761	4666	--	4486	--	4632	4491	4635	4660
4.5		4568	4505	4406	--	--	--	--	5952	--	--	4311	--	4338	4535	4509	--
5		4534	4568	4739	--	--	--	--	--	--	--	4432	4469	4548	4569	4478	4492
5.5		4388	4490	4524	--	--	--	--	4765	--	--	4483	4534	4254	4469	4634	4429
6		4537	4533	4688	4536	--	4619	--	4891	--	--	4499	4544	4415	4391	4464	4367
6.5		4520	4430	4690	--	4590	4666	--	4768	4498	--	4506	4648	4493	4527	4441	4473
7		4692	4635	4568	4630	4593	4675	--	4772	4599	--	4516	4446	4568	4662	4632	4504
7.5		4514	4465	4492	--	4856	4807	--	4659	4640	--	4310	4476	4414	4532	4661	4393
8		4628	4721	4434	4551	4601	4702	--	4570	4568	--	4392	4417	4389	4289	4396	4464
8.5		--	4604	--	--	--	--	--	--	4667	--	--	--	--	--	--	--
9		--	4454	4542	--	--	--	--	4707	4508	--	--	--	--	--	4458	4562
9.5		--	4546	4547	--	--	--	--	4675	4617	--	--	--	--	--	4481	4577
10		--	4704	4380	4596	--	--	--	4580	4623	--	--	--	--	--	4506	4592
10.5		--	4626	4475	--	4552	--	--	4409	4673	--	--	--	--	--	4506	4507
11		--	4568	4530	4478	4607	--	--	4394	4635	--	--	--	--	--	4497	4338
11.5		--	4502	4352	--	4898	--	--	4547	4521	--	--	--	--	--	4355	4365
12		--	4400	4575	4717	4685	4596	--	4397	4495	--	--	--	--	--	4543	4327
12.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13		--	--	4344	--	--	--	--	4535	4473	--	--	--	--	--	--	--
13.5		--	4360	4526	--	--	--	--	4556	4909	--	--	--	--	--	--	--
14		--	4606	4573	4565	4404	4353	--	4393	4597	--	--	--	--	--	--	--
14.5		--	4376	4515	--	4569	4465	--	4579	4622	--	--	--	--	--	--	4350
15		--	4425	4434	4476	4531	4329	--	4438	4610	--	--	--	--	--	--	4364
15.5		--	4504	4468	--	4427	4531	--	4517	4676	--	--	--	--	--	--	4463
16		--	4490	--	4565	4619	4245	--	4606	4594	--	--	--	--	--	--	4540
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	4674	--	--	--	--	--	--	--	--	--	--	--	--
17.5		--	4520	4340	--	--	4530	--	--	4524	--	--	--	--	--	4468	4521
18		--	4492	4695	4652	--	4119	--	--	4739	--	--	--	--	--	4282	4464
18.5		--	4472	4479	--	4506	4434	--	4399	4588	--	--	--	--	--	4497	4566
19		--	4329	4313	--	4630	4428	--	4435	4635	--	--	--	--	--	4535	4557
19.5		--	4448	4391	--	4411	4566	--	4543	4552	--	--	--	--	--	4459	4521
20		--	--	4546	4702	4599	4519	--	4565	4750	--	--	--	--	--	4407	4569

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-39	U-40	U-41	U-42	U-43	U-44	U-45	U-46	U-47	U-48A	U-48B	U-48C	U-48D	U-48E	U-49	U-50
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-51	U-52	U-53	U-54	U-55	U-56	U-57	U-58	U-59	U-60	U-61	U-62	U-63	U-64	U-65a	U-65b
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	--	--	--	4973	--	5127	4664	4471	4366	4320	4375
1		--	--	--	--	4841	--	4534	--	5755	--	6133	4660	4775	4427	4487	4372
1.5		--	4568	--	--	4608	4473	4518	4946	6029	--	5702	5063	4851	4580	4359	4353
2		--	4651	--	4936	4752	4711	4519	5216	5621	4894	4921	5164	4606	4895	4519	4604
2.5		4634	4721	4504	5354	4510	4507	4500	5034	5606	5150	5046	4984	4755	4628	--	4690
3		4476	4723	4419	5599	4462	4360	4499	5331	5168	5041	4965	4692	4776	4784	--	4887
3.5		4481	4648	4533	5554	4500	4545	4582	5181	4953	4867	4948	4667	4977	4626	--	4453
4		4547	4603	4768	5175	4598	4468	4762	4880	4888	5200	5032	4625	4749	4778	--	4682
4.5		4535	--	--	--	--	--	4538	4991	5062	4933	5048	4728	4699	--	--	--
5		4527	4690	4699	--	--	4528	4566	4994	5100	4783	4845	4758	4527	--	--	4362
5.5		4736	4696	4491	4655	4661	4574	4588	4932	4732	5149	4816	4615	4565	4620	--	4378
6		4515	4572	4721	4540	4448	4428	4724	4993	4852	4839	4825	4743	4612	4612	--	4477
6.5		4683	4691	4674	4419	4491	4525	4428	4944	4906	4909	4853	4627	4655	4632	--	4617
7		4486	4501	4444	4625	4434	4302	4536	4954	4817	4864	4932	4869	4934	4548	--	4302
7.5		4593	4650	4651	4749	4518	4564	4544	5189	4895	4902	4849	4703	4882	4689	--	4465
8		4199	4487	4647	4718	4500	4511	4517	5147	5004	5077	4976	4807	4696	4634	--	4354
8.5		--	--	--	--	--	--	--	--	--	--	--	--	--	4463	--	--
9		4615	4393	4453	--	--	4504	--	--	--	--	--	--	--	4789	--	--
9.5		4470	4434	4469	4670	4386	4503	4641	--	--	--	--	--	--	4669	--	4445
10		4577	4663	4441	4658	4544	4575	4531	--	--	--	--	--	--	4502	--	4555
10.5		4630	4517	4331	4722	4293	4432	4391	--	--	--	--	--	--	4610	--	4462
11		4481	4404	4401	4576	4365	4580	4605	--	--	--	--	--	--	4572	--	4460
11.5		4496	4633	4608	4493	4578	4377	4392	--	--	--	--	--	--	4413	--	4357
12		4486	4447	4477	4443	4489	4360	4271	--	--	--	--	--	--	4587	--	4387
12.5		--	--	--	--	--	4548	--	--	--	--	--	--	--	--	--	--
13		4431	4605	4459	--	--	4431	--	--	--	--	--	--	--	--	--	--
13.5		4531	4495	4395	4756	4481	4404	4596	--	--	--	--	--	--	--	--	--
14		4538	4567	4606	4647	4476	4638	4532	--	--	--	--	--	--	--	--	--
14.5		4521	4460	4431	4484	4615	4490	4395	--	--	--	--	--	--	--	--	--
15		4569	4499	4569	4649	4359	4449	4310	--	--	--	--	--	--	--	--	--
15.5		4331	4574	4494	4526	4552	4204	4571	--	--	--	--	--	--	--	--	--
16		4261	4473	4458	4623	4408	4417	4440	--	--	--	--	--	--	--	--	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	4567	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5		4472	4791	--	--	4597	--	4401	--	--	--	--	--	--	--	--	--
18		4429	4372	4407	4418	4525	4390	4317	--	--	--	--	--	--	--	--	--
18.5		4473	4469	4472	4617	4366	4305	4496	--	--	--	--	--	--	--	--	--
19		4434	4520	4577	4860	4297	4398	4587	--	--	--	--	--	--	--	--	--
19.5		4337	4459	4431	4425	4492	4597	4405	--	--	--	--	--	--	--	--	--
20		4409	4462	4533	4388	4372	4454	4601	--	--	--	--	--	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-51	U-52	U-53	U-54	U-55	U-56	U-57	U-58	U-59	U-60	U-61	U-62	U-63	U-64	U-65a	U-65b
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-66	U-67	U-68	U-69	U-70	U-71	U-72	U-73	U-74	U-74b	U-75	U-75b	U-75c	U-75d	U-75e	U-76
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	4475	--	--	4374	--	--	--	--	--	--	--
1		--	4665	--	4567	--	4487	--	--	4958	--	4600	4595	4544	4679	--	4987
1.5		4745	4816	4613	4478	4491	4558	--	4501	4946	--	4687	4560	4615	4522	4561	4856
2		4764	6786	4995	4794	4615	4666	4625	4545	4972	--	4719	4682	4540	4699	4661	4956
2.5		5021	7746	6044	4796	4840	4580	4443	4694	4739	--	4620	4992	4536	4760	4474	4921
3		4603	5951	6189	4606	4773	4463	4732	4600	4738	--	6098	6326	4480	4458	4716	4861
3.5		4622	5147	5580	4548	4785	4562	4628	4642	4512	--	4862	5208	4675	4800	4770	5093
4		4635	5122	4977	4500	4552	4809	4464	4669	4560	--	4687	4914	4847	4761	5147	4824
4.5		4655	4766	4653	4624	--	4486	--	4506	--	--	--	--	4517	--	--	4952
5		4623	4721	4560	4554	4479	4426	--	4429	4990	--	--	--	4775	--	--	5028
5.5		4760	4493	4755	4632	4440	4612	--	4418	4786	--	--	--	4845	--	--	5018
6		4728	4408	4406	4526	4591	4429	4534	4506	4427	--	--	5078	4749	--	--	4706
6.5		4741	4537	4592	4420	4592	4318	4450	4559	4634	--	5050	5065	4603	4786	--	4979
7		4717	4620	4453	4608	4442	4547	4412	4586	4541	--	6180	5376	4698	4889	4665	4730
7.5		4631	4627	4498	4515	4814	4666	4499	4403	4584	--	9696	--	4714	4710	4702	4781
8		4678	4550	4786	4831	4653	4317	4417	4529	4698	--	6462	--	4767	4675	4749	4710
8.5		--	--	--	--	--	--	--	--	4368	--	--	--	--	--	--	--
9		--	--	--	--	--	--	--	--	4472	--	--	--	--	--	--	--
9.5		--	--	--	--	--	--	--	--	4645	--	--	--	--	4855	--	--
10		--	--	--	--	--	--	--	--	4598	--	--	--	--	4866	--	--
10.5		--	--	--	--	--	--	--	--	4666	--	--	--	--	--	--	--
11		--	--	--	--	--	--	--	--	4593	--	--	--	--	--	--	--
11.5		--	--	--	--	--	--	--	--	4702	--	--	--	--	--	4750	--
12		--	--	--	--	--	--	--	--	4602	--	--	--	--	--	4717	--
12.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13		--	--	--	--	--	--	--	--	--	4466	--	--	--	--	--	--
13.5		--	--	--	--	--	--	--	--	--	4478	--	--	--	--	--	--
14		--	--	--	--	--	--	--	--	--	4376	--	--	--	--	--	--
14.5		--	--	--	--	--	--	--	--	--	4522	--	--	--	--	--	--
15		--	--	--	--	--	--	--	--	--	4515	--	--	--	--	--	--
15.5		--	--	--	--	--	--	--	--	--	4683	--	--	--	--	--	--
16		--	--	--	--	--	--	--	--	--	4325	--	--	--	--	--	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18		--	--	--	--	--	--	--	--	--	4398	--	--	--	--	--	--
18.5		--	--	--	--	--	--	--	--	--	4319	--	--	--	--	--	--
19		--	--	--	--	--	--	--	--	--	4198	--	--	--	--	--	--
19.5		--	--	--	--	--	--	--	--	--	4415	--	--	--	--	--	--
20		--	--	--	--	--	--	--	--	--	4654	--	--	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-66	U-67	U-68	U-69	U-70	U-71	U-72	U-73	U-74	U-74b	U-75	U-75b	U-75c	U-75d	U-75e	U-76
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-77	U-78	U-79c	U-80	U-81	U-82	U-83	U-84	U-85	U-86a	U-86b	U-87	U-88	U-89	U-89b	U-90
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	4706	--	--	--	--	--	--	--	--	--	--	--	--	--
1		4887	--	4891	--	--	4767	4721	--	--	--	--	--	--	--	--	4479
1.5		4775	--	4974	4418	--	4727	4907	--	4409	--	--	--	--	4846	--	4734
2		4948	--	5118	4643	4509	5051	4854	4525	4925	--	4550	4522	4464	4773	--	4699
2.5		4894	4767	5202	4680	4401	4899	4868	4691	5104	4676	4674	5069	4565	4977	--	4441
3		5123	5145	5043	4770	4583	4856	5665	4935	4648	4908	4867	6045	4581	4851	4766	4713
3.5		5079	5191	5167	4686	4823	4521	4491	4848	4675	4818	4967	5215	4800	4664	4990	4625
4		4980	4657	4913	4667	4357	4570	4734	4833	4386	4989	4816	4655	4596	4597	4657	4710
4.5		--	--	--	--	--	--	--	4528	--	--	--	4575	--	--	--	--
5		4881	4396	4768	--	--	--	--	4880	--	--	4870	4493	--	--	--	--
5.5		4944	4657	4665	--	4638	4325	4613	4675	4568	--	4632	4322	--	--	4320	--
6		4690	4622	4780	--	4300	4575	4572	4504	4487	--	4761	4327	4523	--	4522	--
6.5		4911	4674	4523	--	4508	4613	4657	4535	4417	--	4649	4450	4467	--	4887	--
7		4801	4555	4589	--	4663	4586	4511	4619	4391	--	4652	4437	4527	--	4469	--
7.5		4977	4786	4665	4673	4626	4708	4548	4555	4413	--	4624	4513	4615	--	4657	--
8		4864	4377	4619	4440	4653	4649	4600	4578	4653	4781	4559	4661	4601	4636	4640	--
8.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9		--	--	--	--	--	4400	--	--	--	--	4674	--	--	--	--	--
9.5		--	--	--	--	--	4541	4622	--	--	--	4440	--	--	--	--	--
10		--	--	--	--	--	4600	4495	--	--	--	4528	--	--	--	--	--
10.5		--	--	--	--	--	4657	4579	--	--	--	4987	--	--	--	--	--
11		--	--	--	--	--	4537	4642	--	--	4671	4532	--	--	--	--	--
11.5		--	--	--	--	--	4468	4609	--	--	4749	4630	--	--	--	--	--
12		--	--	--	--	--	4755	4706	--	--	4518	4540	--	--	--	--	--
12.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13.5		--	--	--	--	--	--	--	--	--	--	4479	--	--	--	--	--
14		--	--	--	--	--	--	--	--	--	--	4564	--	--	--	--	--
14.5		--	--	--	--	--	--	--	--	--	--	4500	--	--	--	--	--
15		--	--	--	--	--	--	--	--	--	--	4564	--	--	--	--	--
15.5		--	--	--	--	--	--	--	--	--	--	4772	--	--	--	--	--
16		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18		--	--	--	--	--	--	--	--	--	--	4692	--	--	--	--	--
18.5		--	--	--	--	--	--	--	--	--	--	4838	--	--	--	--	--
19		--	--	--	--	--	--	--	--	--	--	4672	--	--	--	--	--
19.5		--	--	--	--	--	--	--	--	--	--	4438	--	--	--	--	--
20		--	--	--	--	--	--	--	--	--	--	4506	--	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-77	U-78	U-79c	U-80	U-81	U-82	U-83	U-84	U-85	U-86a	U-86b	U-87	U-88	U-89	U-89b	U-90
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-91	U-92	U-93	U-94	U-95	U-96	U-96b	U-97	U-98	U-99	U-100	U-100b	U-100c	U-101	U-102	U-103
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1		--	--	--	--	5010	--	--	4487	--	--	--	--	--	--	--	--
1.5		--	--	5208	--	5038	--	4897	4451	--	--	--	--	--	--	--	4730
2		4501	4738	5085	4279	4947	--	4935	4637	4475	4631	--	--	--	4664	4716	4784
2.5		4480	4935	5179	4684	5144	--	4895	4620	4504	5219	--	4812	4653	4683	4881	5011
3		5428	4746	4751	4748	5349	4715	4728	4650	4655	4940	4668	4969	4613	4722	4741	4882
3.5		4864	4854	4862	4757	5483	4680	4746	4610	4646	4785	5154	5054	4859	4868	4742	4760
4		4732	4602	4590	4768	4908	4607	4593	4742	4585	4824	4670	4940	4701	4800	4743	4653
4.5		--	--	--	--	--	--	--	4569	4462	--	--	--	--	--	--	--
5		--	--	--	--	--	--	--	4578	4652	--	--	--	--	--	4539	--
5.5		--	--	4727	--	4431	--	4480	4433	4666	4679	--	--	--	--	4552	--
6		--	--	4866	4423	4566	--	4608	4636	4579	4580	--	--	--	--	4437	4676
6.5		--	4629	4770	4439	4600	4639	4438	4581	4683	4632	--	--	4509	4622	4529	4629
7		--	4627	4717	4666	4512	4787	4687	4583	4709	4754	--	--	4606	4714	4553	4701
7.5		--	4660	4730	4564	4542	4562	4749	4544	4648	4691	--	--	4810	4516	4792	4523
8		--	4677	4749	4255	4782	4707	4590	4510	4596	4661	--	--	4747	4743	4617	4661
8.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9		--	--	4787	--	--		4681	4623	4554	--	--	--	--	4399	--	--
9.5		--	--	4722	4457	4464		4556	4479	4364	--	--	--	--	4783	--	--
10		--	4914	4662	4479	4596		4452	4589	4715	--	--	--	--	4578	--	--
10.5		--	4738	4615	4324	4869		4612	4410	4505	--	--	--	5106	4638	--	--
11		--	4747	4491	4422	4890		4710	4182	4432	--	--	--	5054	4384	--	--
11.5		--	4834	4628	4283	4886		4732	4586	4523	5218	--	--	4867	4498	--	--
12		--	4599	4395	4312	4814		4688	4478	4401	5063	--	--	4945	4492	--	--
12.5		--	--	--	--	--	--	--	--	4468	--	--	--	--	--	--	--
13		--	--	--	--	4522	--	4763	4393	4422	--	--	--	--	--	--	--
13.5		--	4584	4665	--	4730	--	4534	4233	4433	4431	--	--	4902	--	--	--
14		--	4662	4530	--	4479	--	4546	4397	4495	4615	--	--	4683	--	--	--
14.5		--	4638	4690	--	4651	--	4538	4253	4516	4575	--	--	4611	--	--	--
15		--	4580	4612	--	4683	--	4705	4455	4476	4521	--	--	4607	--	--	--
15.5		--	4642	4474	--	4657	--	4785	4409	4491	4549	--	--	4437	--	--	--
16		--	4650	4589	--	4541	--	4680	4402	4298	4660	--	--	4597	--	--	--
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5		--	4503	4569	--	4636	--	4517	4524	--	--	--	--	--	--	--	--
18		--	4619	4521	--	4417	--	4525	4593	4430	4500	--	--	4693	--	--	--
18.5		--	4712	4445	--	4355	--	4545	4250	4434	4775	--	--	4649	--	--	--
19		--	4606	4789	--	4708	--	4494	4525	4460	4408	--	--	4450	--	--	--
19.5		--	4501	4645	--	4502	--	4556	4334	4586	4611	--	--	4753	--	--	--
20		--	4537	4474	--	4650	--	4428	4357	4511	4777	--	--	4712	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-91	U-92	U-93	U-94	U-95	U-96	U-96b	U-97	U-98	U-99	U-100	U-100b	U-100c	U-101	U-102	U-103
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

[redacted]

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-104	U-105	U-106	U-107	U-107b	U-108	U-109	U-110	U-111	U-112	U-113	U-113b	U-114	U-115	U-116	U-117
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	--	--	--	4497	--	--	--	--	--	--	--	--
1		4982	4718	--	--	--	4893	--	4888	--	--	--	4656	5187	--	4643	--
1.5		4849	5292	4541	--	--	4904	--	5215	--	4551	--	4614	5605	--	4907	5096
2		4844	4685	4621	--	--	5017	4554	4857	4940	4769	--	4725	6456	--	4851	5003
2.5		4734	4691	4620	4884	4884	5002	4901	4751	4935	4893	--	4660	6353	5099	4933	5041
3		4741	4742	4548	4942	4942	4953	4487	4645	4987	4600	4644	4603	5813	4988	4643	4714
3.5		4722	4687	4338	4918	4918	4797	4721	4585	4610	4839	4432	4535	6221	5104	4786	4732
4		4926	4562	4485	5169	5169	4821	4604	4504	4516	4706	4376	4463	6299	4827	4609	4605
4.5		--	4596	4373	--	--	--	--	--	--	--	4710	--	--	4791	4430	--
5		--	4313	4345	--	--	--	--	--	--	4315	4571	--	--	4795	4462	4634
5.5		4550	4531	4316	--	--	4763	4486	4590	--	4350	4618	--	--	4678	4548	4526
6		4660	4546	4401	--	4869	4537	4384	4309	4555	4585	4361	--	--	4633	4623	4488
6.5		4398	4573	4360	--	--	4827	4463	4343	4349	4366	4418	--	7669	4542	4560	4506
7		4586	4408	4381	4892	4892	4648	4475	4385	4590	4418	4505	--	8177	4605	4454	4467
7.5		4812	4446	4488	5007	5007	4533	4407	4310	4421	4530	4681	--	5758	4523	4468	4403
8		4512	4493	4397	4701	4701	4517	4430	4449	4249	4496	4730	--	5137	4767	4624	4573
8.5		--	--	4479	--	--	--	--	4388	--	4648	--	--	--	--	--	--
9		--	4677	4453	--	--	--	--	4574	--	4734	4370	--	4983	4444	4525	--
9.5		--	4523	4475	4754	4750	4470	4722	4435	4282	4637	4425	--	4937	4711	4732	4653
10		--	4509	4352	4680	4680	5048	4287	4636	4541	4511	4288	--	4725	4669	4612	4613
10.5		--	4696	4571	4601	4601	4888	4454	4459	4476	4453	4410	--	4522	4413	4509	4623
11		--	4399	4289	4735	4735	4631	4467	4369	4507	4335	4360	--	4538	4689	4593	4561
11.5		--	4465	4500	4869	4869	4806	4340	4414	4241	4613	4450	--	4546	4513	4347	4570
12		--	4567	4571	4511	4511	4871	4180	4457	4508	4214	--	--	4534	4637	4630	4600
12.5		--	--	--	--	--	--	4479	--	--	--	4486	--	--	--	--	--
13		--	--	4421	--	--	4747	4535	--	--	4458	4625	--	4789	--	4516	--
13.5		--	--	4416	4682	4682	4328	4338	--	--	4487	4376	--	4801	4553	4365	4567
14		--	--	4437	4682	4682	4494	4574	--	--	4426	4379	--	4568	4577	4508	4502
14.5		--	--	4559	4548	4548	4495	4189	--	--	4423	4415	--	4626	4472	4341	4432
15		--	--	4258	4567	4567	4625	4335	--	--	4539	4414	--	4509	4479	4538	4664
15.5		--	--	4417	4607	4607	4412	4332	--	--	4392	4355	--	--	4339	4369	4792
16		--	--	4323	4691	4691	4593	4441	--	--	4343	4386	--	--	4612	4452	4625
16.5		--	--	--	--	--	--	--	--	--	--	--	--	4452	4602	--	--
17		--	--	4421	--	--	4623	4598	--	--	--	--	--	4800	4523	--	--
17.5		--	--	4422	4634	4634	4605	4443	--	--	4504	4413	--	4575	4613	--	4431
18		--	--	4405	4620	4620	4519	4342	--	--	4478	4351	--	4643	4488	4566	4564
18.5		--	--	4279	4582	4582	4614	4323	--	--	4437	4499	--	4757	4485	4422	4510
19		--	--	4422	4619	4619	4373	4243	--	--	4397	4280	--	4646	4557	4516	4360
19.5		--	--	4537	4408	4408	4530	4570	--	--	4340	4385	--	4885	4498	4310	4704
20		--	--	4391	4564	4564	4561	4480	--	--	4433	4504	--	4553	4485	4371	4603

[redacted]

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-104	U-105	U-106	U-107	U-107b	U-108	U-109	U-110	U-111	U-112	U-113	U-113b	U-114	U-115	U-116	U-117
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4488
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4489	4447
22.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4468	4622
23		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4353	4423
23.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4479	4345
24		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4439	4525
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4497	4313
26		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4465	4335
26.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4620	4565
27		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4433	4544
27.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4582	4418
28		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4473	4574
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4515	--
29.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4507	4390
30		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4449	4409
30.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4723	4392
31		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4330	4653
31.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4431	4534
32		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4396	4556
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4260	--
34		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4346	4548
34.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4429	4475
35		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4596	4465
35.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4560	4487
36		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4577	4483
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4618	4478
38		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4614	4665
38.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4550	4498
39		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4439	4445
39.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4399	4424
40		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4612	4487

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-118	U-119	U-120	U-121	U-122	U-123	U-124	U-125	U-126	U-127	U-128	U-129	U-130	U-131	U-132	U-133
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5		--	--	--	--	4515	--	--	--	--	--	--	--	--	--	--	--
1		--	--	--	--	4533	--	--	4499	--	--	--	--	--	4907	--	--
1.5		4548	--	--	4781	4611	--	4766	4745	--	4657	4570	4659	4677	4829	--	4687
2		4716	4676	4658	4907	4448	--	4585	4940	4572	4653	4841	4718	4796	4837	4830	4622
2.5		4545	4691	4632	4478	4488	4497	4654	4975	4561	4583	4473	4989	4632	4772	4739	4642
3		4441	4797	4527	4707	4406	4754	4535	5003	4750	4781	4536	4708	4670	4823	4637	4828
3.5		4840	4825	4673	4615	4463	4802	4761	5178	4591	4598	4446	4570	4661	4811	4578	4736
4		4761	4722	4576	4494	4569	4632	4550	5066	4518	4416	4771	4650	4644	4762	4654	4717
4.5		--	--	--	4568	--	--	--	--	--	--	--	--	--	--	--	4518
5		--	--	--	4644	4444	4495	4400	--	--	4400	--	4668	4504	--	4464	4588
5.5		--	4824	4635	4322	4461	4564	4655	--	--	4688	--	4710	4431	4600	4493	4603
6		--	4628	4483	4208	4582	4572	4451	5023	--	4402	4688	4838	4556	4705	4820	4545
6.5		4672	--	4743	4281	4544	4471	4263	4955	--	4550	4794	4888	4538	4580	4736	4596
7		4839	--	4576	4425	4565	4716	4455	4615	--	4562	4741	5165	4542	4716	4734	4444
7.5		4983	--	4566	4397	4391	4635	4530	4581	--	4483	4627	4499	4664	4763	4649	4582
8		4925	--	4584	4426	4646	--	4618	4646	4589	4526	4569	4443	4623	4603	4787	4717
8.5		--	4775	--	4417	--	--	--	--	--	--	--	--	--	--	--	--
9		--	4752	--	4454	4392	--	--	--	--	4538	--	--	4690	--	--	--
9.5		4659	--	4745	4364	4293	--	--	--	--	4586	--	--	4662	--	--	--
10		4594	--	4640	4213	4552	--	--	--	4738	4558	4590	--	4733	4496	--	4354
10.5		4485	--	4495	4412	4285	4703	--	--	4450	4424	4494	--	4753	4471	4867	4550
11		4433	--	4582	4339	4305	4614	--	4610	4450	4461	4494	4712	4654	4408	4582	4449
11.5		4437	--	4686	4356	4619	4596	--	4610	4394	4410	4626	4727	4640	4494	4774	4373
12		4478	4575	4803	4384	4543	4627	4430	4462	4337	4502	4417	4454	4568	4673	4470	4638
12.5		4582	4430	--	--	--	--	--	--	--	--	--	--	--	--	5520	--
13		4478	4571	4297	4391	4363	--	--	--	--	4567	--	--	4554	--	6626	--
13.5		4644	4462	4440	4489	4472	--	4454	--	--	4404	--	--	4568	--	9665	4700
14		4528	4477	4458	4178	4550	--	4626	--	--	4523	4533	4525	4480	4483	6787	4474
14.5		4395	4608	4620	4511	4455	--	4592	4692	--	4509	4623	4671	4727	4574	7091	4615
15		4495	4553	4552	4371	4271	--	4587	4628	--	4596	4598	4512	4434	4625	5155	4582
15.5		4525	--	4557	4212	4429	--	4681	4592	--	4395	4526	4528	4463	4426	4533	4575
16		4389	4612	4490	4531	4482	--	4498	4685	--	4464	4518	4516	4539	4356	4504	4282
16.5		--	4479	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17		4552	4243	4599	--	--	--	--	--	--	--	--	--	--	--	4560	--
17.5		4231	4537	4616	4551	--	--	--	4436	--	4514	--	4613	--	--	4824	4558
18		4434	4439	4491	4468	4374	--	4524	4337	--	4594	--	4689	--	4459	4799	4483
18.5		4685	4636	4541	4492	4447	--	4593	4609	--	4461	4373	4432	--	4572	4568	4388
19		4393	4466	4376	4306	4433	--	4572	4445	--	4397	4764	4653	--	4420	4620	4470
19.5		4517	--	4645	4465	4233	--	4383	4456	--	4213	4472	4442	--	4339	4735	4542
20		4458	--	4500	4373	4339	--	4334	4422	--	4426	4594	4536	4596	4674	4900	4430

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

Sample ID		U-118	U-119	U-120	U-121	U-122	U-123	U-124	U-125	U-126	U-127	U-128	U-129	U-130	U-131	U-132	U-133
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21		--	--	--	--	--	--	--	--	--	--	--	--	4708	--	4934	--
21.5		4520	--	4513	--	--	--	--	--	--	--	--	--	4281	--	4858	--
22		4506	--	4433	--	--	--	4461	--	--	--	4631	--	4488	4513	4718	4477
22.5		4576	--	4304	--	--	--	4404	--	--	--	4870	--	4629	4499	4607	4365
23		4372	--	4560	--	--	--	4433	--	--	--	4485	--	4424	4519	4624	4482
23.5		4596	--	4602	--	--	--	4550	--	--	--	4629	--	4321	4357	4648	4486
24		4539	--	4389	--	--	--	4427	--	--	--	4688	4688	4502	4243	4445	4280
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25		4385	--	4570	--	--	--	--	--	--	--	--	--	--	--	--	--
25.5		4562	--	4527	--	--	--	4492	--	--	--	--	--	4499	4408	--	4647
26		4559	--	4531	--	--	--	4511	--	--	--	4604	4583	4437	4662	--	4473
26.5		4455	--	4603	--	--	--	4599	--	--	--	4830	4516	4452	4615	--	4600
27		4503	--	4339	--	--	--	4471	--	--	--	4555	4756	4664	4571	--	4575
27.5		4485	--	4495	--	--	--	4479	--	--	--	4461	4449	4569	4582	--	4396
28		4480	--	4493	--	--	--	4559	--	--	--	4445	4459	4490	4348	--	4512
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
29		--	--	4281	--	--	--	--	--	--	--	--	--	--	--	--	--
29.5		--	--	4672	--	--	--	4530	--	--	--	--	4469	4496	--	--	4838
30		4468	--	4421	--	--	--	4334	--	--	--	4397	4398	4538	4502	--	4395
30.5		4320	--	4300	--	--	--	4614	--	--	--	4621	4441	4610	4551	--	4416
31		4391	--	4365	--	--	--	4441	--	--	--	4542	4696	4618	4485	--	4476
31.5		4438	--	4362	--	--	--	4394	--	--	--	4368	4585	4417	4520	--	4300
32		4532	--	4537	--	--	--	4369	--	--	--	--	4644	4234	4395	--	4502
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33		4448	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
33.5		4424	--	--	--	--	--	--	--	--	--	4546	4557	4358	--	--	4352
34		4499	--	--	--	--	--	4479	--	--	--	4493	4806	4421	--	--	4593
34.5		4378	--	4546	--	--	--	4420	--	--	--	4405	4403	4728	4440	--	4624
35		4545	--	4571	--	--	--	4648	--	--	--	4569	4548	4539	4397	--	4511
35.5		4466	--	4553	--	--	--	4328	--	--	--	4656	4539	4275	4430	--	4476
36		4658	--	4381	--	--	--	4318	--	--	--	4336	4425	4556	4647	--	4650
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37		4467	--	4532	--	--	--	--	--	--	--	--	--	--	--	--	--
37.5		4308	--	4406	--	--	--	4365	--	--	--	--	4554	4404	--	--	4515
38		4382	--	4342	--	--	--	4475	--	--	--	4593	4567	4720	4445	--	4436
38.5		4579	--	4393	--	--	--	4480	--	--	--	4483	4516	4363	4419	--	4600
39		4453	--	4619	--	--	--	4288	--	--	--	4704	4680	4400	4483	--	4739
39.5		4472	--	4555	--	--	--	4260	--	--	--	4341	4363	4364	4517	--	4739
40		4680	--	4386	--	--	--	4307	--	--	--	4518	4280	4524	4454	--	4367

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-134	U-135	U-136	U-137	U-138	U-139	U-140	U-140B	U-141	U-142	U-143	U-144	U-145	U-146	U-147	
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	
0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
0.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1		--	--	--	4462	4373	4290	4346	--	--	4404	--	--	--	4559	4547	
1.5		4737	--	4270	4457	4239	4332	4578	4393	--	4481	4643	--	4707	4713	4740	
2		4668	4872	4616	4765	4568	4603	4498	4401	--	4560	4576	4569	4526	4721	4716	
2.5		4698	4587	4749	4506	4666	4571	4314	4619	4434	4531	4442	4328	4586	4598	4703	
3		4781	4602	4751	4670	4342	4466	4370	4602	4529	4397	4614	4624	4739	4757	4642	
3.5		4731	4538	4503	4651	4282	4438	4446	4572	4582	4651	4334	4323	4570	4678	4655	
4		4590	4717	4423	4600	4413	4456	4463	4323	4644	4388	4250	4457	4366	4605	4411	
4.5		--	--	--	--	--	--	--	4342	--	--	--	--	--	--	--	
5		4444	--	--	--	--	--	--	4347	--	--	--	--	4693	4620	--	
5.5		4564	--	4417	--	4283	--	--	4567	4296	--	--	--	4494	4695	--	
6		4607	--	4491	4514	4438	4446	--	4400	4277	--	--	--	4688	4837	4690	
6.5		4657	4642	4393	4516	4505	4557	--	4562	4279	--	--	--	4801	4744	4610	
7		4523	4882	4479	4438	4377	4400	--	4464	4265	--	--	--	4668	4568	4610	
7.5		4605	4828	4350	4590	4519	4407	--	4414	4172	--	--	--	4603	4570	4351	
8		4567	4939	4393	4380	4337	4329	--	4564	4342	--	--	--	4655	4508	4517	
8.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
9		--	--	--	--	--	--	--	--	--	--	--	--	4664	--	--	
9.5		4814	--	--	--	--	--	--	--	--	--	--	--	4560	--	4597	
10		4571	--	--	--	--	--	--	--	--	--	--	--	4372	--	4505	
10.5		4490	4728	--	--	--	--	--	--	--	--	--	--	4413	--	4754	
11		4509	4593	--	--	--	--	--	--	--	--	--	--	4498	--	4510	
11.5		4353	4622	--	--	--	--	--	--	--	--	--	--	4549	--	4682	
12		4601	4678	--	--	--	--	--	--	--	--	--	--	4796	--	4594	
12.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
13		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
13.5		4879	4642	--	--	--	--	--	--	--	--	--	--	4597	--	4678	
14		4465	4374	--	--	--	--	--	--	--	--	--	--	4530	--	4504	
14.5		4500	4721	--	--	--	--	--	--	--	--	--	--	4534	--	4641	
15		4580	4404	--	--	--	--	--	--	--	--	--	--	4477	--	4579	
15.5		4473	4540	--	--	--	--	--	--	--	--	--	--	4405	--	4410	
16		4498	4587	--	--	--	--	--	--	--	--	--	--	4404	--	4565	
16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
17		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
17.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
18		4515	4438	--	--	--	--	--	--	--	--	--	--	--	--	--	
18.5		4352	4541	--	--	--	--	--	--	--	--	--	--	4416	--	--	
19		4375	4329	--	--	--	--	--	--	--	--	--	--	4393	--	--	
19.5		4596	4358	--	--	--	--	--	--	--	--	--	--	4597	--	--	
20		4585	4675	--	--	--	--	--	--	--	--	--	--	4484	--	--	

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Soil Core Gamma Field Screening

	Sample ID	U-134	U-135	U-136	U-137	U-138	U-139	U-140	U-140B	U-141	U-142	U-143	U-144	U-145	U-146	U-147	
Depth (feet)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	
20.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
21		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
21.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
22		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
22.5		4635	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
23		4640	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
23.5		4539	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
24		4628	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
24.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
25		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
25.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
26		4503	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
26.5		4555	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
27		4606	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
27.5		4620	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
28		4668	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
28.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
29		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
29.5		4615	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
30		4761	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
30.5		4658	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
31		4600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
31.5		4837	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
32		4609	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
32.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
33		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
33.5		4473	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
34		4353	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
34.5		4564	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
35		4550	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
35.5		4715	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
36		4531	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
36.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
37		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
37.5		4531	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
38		4493	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
38.5		4640	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
39		4708	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
39.5		4564	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
40		4706	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table 4
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Sample Identification and Analytical Summary

Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-001	4	4						U-1 (4)
U-001	5	5				U-1 (5)	U-1 (5)	
U-001	7.5	8	U-1 (7.5-8)					
U-002	0	2	U-2 (0-2)					
U-002	18	20	U-2 (18-20)					
U-002	32	34						U-2 (32-34)
U-003	4	4						U-3 (4)
U-003	18.5	20	U-3 (18.5-20)					
U-004	3.5	3.5				U-4 (3.5)		
U-004	7.5	7.5						U-4 (7.5)
U-004	7.5	8	U-4 (7.5-8)					
U-005A	1	1.5	U-5A (1-15)	U-5A (1-15)	U-5A (1-15)			
U-005B	4.5	4.5	U-5B (4.5)					
U-005B	8	8				U-5B (8)		U-5B (8)
U-005C	19.5	20	U-5C(19.5-20)					
U-006	15	15				U-6 (15)		U-6 (15)
U-006	15.5	16	U-6 (15.5-16)					
U-006B	19.5	20	U-6B(19.5-20)					
U-007	0.5	1.5	U-7 (0.5-1.5)					
U-007	2	2				U-7 (2)		
U-007	2	2.5						U-7 (2-2.5)
U-007	7.5	7.5				U-7 (7.5)		
U-007	7.5	8	U-7 (7.5-8.0)					
U-008	1	1.5	U-8 (1-1.5)					
U-008	4	4				U-8 (4)		U-8 (4)
U-008	15	15.5	U-8 (15-15.5)					
U-008	15.5	16						U-8 (15.5-16)
U-009	1	1.5	U-9 (1-1.5)					
U-009	2	2				U-9 (2)		
U-009	16	16						U-9 (16)
U-009	19.5	20	U-9(19.5-20)					
U-011	2.5	3	U-11 (2.5-3)					
U-011	4	4						U-11 (4)
U-011	7.5	8	U-11 (7.5-8)					
U-012	2	3	U-12(2-3)	U-12(2-3)	U-12(2-3)			
U-012	7.5	8						U-12(7.5-8)
U-012	15	16	U-12(15-16)	U-12(15-16)	U-12(15-16)			
U-013	1.5	2.5	U-13(1-2)	U-13(1-2)	U-13(1-2)			
U-013	8.5	9						U-13(8.5-9)

Table 4
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Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-013	15.5	16	U-13(15.5-16)					
U-014	1.5	2.5	U-14(1.5-2.5)					
U-014	2	2.5						U-14(2-2.5)
U-014	15	16	U-14(19-20)					
U-015	8	10	U-15 (8-10)					
U-015	14	16				U-15 (14-16)	U-15 (14-16)	
U-015	18	20	U-15 (18-10)					
U-015	38	40						U-15 (38-40)
U-016A	3.5	6.5	U-16A(3.5-6.5)					
U-016A	15.5	15.5	U-16A (15.5)			U-16A (15.5)	U-16A (15.5)	
U-016A	15.5	18.8						U-16A (15.5-18.8)
U-016D	19.5	20	U-16D (19.5-20)					
U-017	7	8	U-17(7-8)	U-17(7-8)	U-17(7-8)			
U-017	16	16				U-17(16')	U-17(16')	
U-017	19	19.5						U-17(19-19.5)
U-017	19.5	20	U-17(19.5-20)					
U-018	2.5	3	U-18(2.5-3)					
U-018	16	16				U-18(16)		
U-018	19	19.5				U-18(19.0-19.5)	U-18(19.0-19.5)	U-18(19.0-19.5)
U-018	19.5	20	U-18(19.5-20)					
U-019	2	3.5	U-19(2-3.5)	U-19(2-3.5)	U-19(2-3.5)			
U-019	18	18				U-19(18)	U-19(18)	
U-019	18.5	19						U-19(18.5-19)
U-019	19.5	20	U-19(19.5-20)					
U-020	2.5	3	U-20(2.5-3)	U-20(2.5-3)	U-20(2.5-3)			
U-020	19.5	19.5	U-20 (19.5)			U-20 (19.5)	U-20 (19.5)	
U-020	19.5	19.8						U-20 (19.5-19.8)
U-021	1.5	2	U-21 (1.5-2)					
U-021	16	16.5						U-21 (16-16.5)
U-021	17	17.5				U-21 (17-17.5)	U-21 (17-17.5)	
U-021	18	20	U-21 (18-20)					
U-022	2	2.5	U-22(2.0-2.5)					
U-022	7.5	7.5				U-22 (7.5)	U-22 (7.5)	U-22 (7.5)
U-022	7.5	7.8	U-22 (7.5-7.8)					
U-023	2.5	2.5						U-23 (2.5)
U-023	11	11						U-23 (11)
U-023	11.5	12	U-23 (11.5-12)					
U-024	2.5	3	U-24 (2.5-3)					
U-024	5.5	6						U-24 (5-5.6)

Table 4
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Sample Identification and Analytical Summary

Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-024	11.5	12	U-24 (11.5-12)					U-24 (11.5-12)
U-025	2	2.5	U-25 (2-2.5)					
U-025	7.5	7.5						U-25 (7.5)
U-025	10.5	10.5						U-25 (10.5)
U-025	11.5	12	U-25 (11.5-12)					
U-026	3	4	U-26 (3-4)					
U-026	3.5	3.5						U-26 (3.5)
U-026	11.5	12	U-26 (11.5-12)					
U-027	2	2.5	U-27 (2-2.5)					
U-027	6	6.5						U-27 (6-6.5)
U-027	11.5	12	U-27 (11.5-12)					
U-028	1.5	2	U-28 (1.5-2)					
U-028	7	7.5						U-28 (7-7.5)
U-028	7.5	8	U-28 (7.5-8)					
U-029	1	1.5	U-29 (1-1.5)					
U-029	4	4						U-29 (4)
U-029	7	7						U-29 (7)
U-029	7.5	8	U-29 (7.5-8)					
U-030	1.5	2				U-30 (1.5-2)		
U-030	2.5	3	U-30 (2.5-3)					
U-030	3	3						U-30 (3)
U-030	7.5	8	U-30 (7.5-8)					
U-031	3.8	4						U-31 (3.8-4.0)
U-031	11.5	11.5	U-31 (11.5)			U-31 (11.5)	U-31 (11.5)	
U-031B	19.5	20	U-31B (19.5-20)					
U-032	2.5	3	U-32 (2.5-3)	U-32 (2.5-3)	U-32 (2.5-3)			
U-032	3.5	3.5						U-32 (3.5)
U-032	11.5	12				U-32 (11.5-12)	U-32 (11.5-12)	
U-032	19.5	20	U-32 (19.5-20)					
U-033	1.5	2.5	U-33 (1.5-2.5)					
U-033	4	4						U-33 (4)
U-033	12	12				U-33 (12)	U-33 (12)	
U-033B	19.5	20	U-33B (19.5-20)					
U-034	3	3.5	U-34 (3-3.5)	U-34 (3-3.5)	U-34 (3-3.5)			
U-034	18.5	19						U-34 (18.5-19)
U-034	19.5	20	U-34 (19.5-20)					
U-035B	3.5	3.5						U-35B (3-5)
U-035B	12	12				U-35B (12)	U-35B (12)	
U-035B	12	12.5	U-35B (12-12.5)					

Table 4
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Sample Identification and Analytical Summary

Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-035B	19	20	U-35B (19-20)					
U-036	2	4				U-36 (2-4)	U-36 (2-4)	
U-036	10	12				U-36 (10-12)		
U-036	12	14						U-36 (12-14)
U-036	14	16	U-36 (14-16)	U-36 (14-16)	U-36 (14-16)			
U-036	18	22	U-36 (18-22)					
U-036	38	40	U-36 (38-40)					
U-037	3	3.5	U-37(3-3.5)					
U-037	16	16.5				U-37(16-16.5)	U-37(16-16.5)	
U-037	18.5	19						U-37(18.5-19)
U-037	19.5	20	U-37(19.5-20)					
U-038	2.8	3						U-38 (2.8-3)
U-038	19	19	U-38 (19-20)			U-38 (19-0)	U-38 (19-20)	
U-039	1.5	1.5	U-39 (1.5)	U-39 (1.5)	U-39 (1.5)			
U-039	4	4						U-39 (4)
U-039	7.5	8	U-39 (7.5-8)					
U-040	2.5	4	U-40(2.5-4)					
U-040	11.5	12						U-40(11.5-12)
U-040	19.5	20	U-40(19.5-20)					
U-041	2.5	3	U-41(2.5-3.0)					
U-041	3.5	3.8						U-41(3.5-3.8)
U-041	18	20	U-41(18-20)					
U-042	1	2	U-42 (1-2)	U-42 (1-2)	U-42 (1-2)			
U-042	14	18	U-42 (14-18)	U-42 (14-18)	U-42 (14-18)			
U-042	18	20						U-42 (18-20)
U-043	2.5	3	U-43(2.5-3)					
U-043	18.5	19				U-43(18.5-19)		U-43(18.5-19)
U-043	19	20	U-43(19-20)					
U-044	3	4	U-44(3-4)	U-44(3-4)	U-44(3-4)			
U-044	17	17.5				U-44(17-17.5)		U-44(17-17.5)
U-044	19	20	U-44(19-20)	U-44(19-20)	U-44(19-20)			
U-046	2.5	3	U-46(2.5-3)	U-46(2.5-3)	U-46(2.5-3)			
U-046	19	19.5				U-46(19-19.5)	U-46(19-19.5)	U-46(19-19.5)
U-046	19.5	20	U-46(19.5-20)					
U-047	6	7	U-47(6-7)					
U-047	15.5	16				U-47(15.5-16)		
U-047	16	16						U-47(16)
U-047	19.5	20	U-47(19.5-20)					
U-048A	0.5	1	U-48A (6-12)	U-48A (6-12)	U-48A (6-12)			

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Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-067	7.5	8	U-67 (7.5-8)	U-67 (7.5-8)	U-67 (7.5-8)			
U-068	0.5	1						U-68 (0.5-1)
U-068	2	3	U-68 (2-3)					
U-068	4	4						U-68 (4)
U-068	6.5	8	U-68 (6.5-8)					
U-069	0.5	0.5						U-69 (0.5)
U-070	0.5	1						U-70 (6-12)
U-070	2.5	3	U-70 (2.5-3)					
U-070	7.5	8	U-70 (7.5-8)					
U-071	0.5	1						U-71 (6-12)
U-071	1.5	2	U-71 (1.5-2)					
U-071	7.5	8	U-71 (7.5-8)					
U-072	2.5	3.5	U-72 (2.5-3.5)					
U-072	7.5	8						U-72 (7.5-8)
U-073	2	2.5	U-73 (2-2.5)					
U-073	2.5	2.8						U-73 (2.5-2.8)
U-073	7.5	8	U-73 (7.5-8)					
U-074	4	4						U-74 (4)
U-074	11.5	12	U-74 (11.5-12)					
U-074B	19.5	19.5	U-74B(19.5)					
U-074B	20	20						U-74B(20)
U-075A	4	4.3						U-75 (4-4.3)
U-075A	7	7.5	U-75 (7-7.5)	U-75 (7-7.5)	U-75 (7-7.5)			
U-075B	2.5	3	U-75B (2.5-3)					
U-075B	6	6.3						U-75B (6-6.3)
U-075B	6.5	7	U-75B (6.5-7)					
U-075E	11	11.5				U-75E (11-11.5)	U-75E (11-11.5)	
U-075E	11.5	12	U-75E (11.5-12)					
U-076	1	2	U-76(1-2)	U-76(1-2.0)	U-76(1-2.0)			
U-076	6.5	7						U-76(6.5-7)
U-076	7	8	U-76(7-8)					
U-077	2.5	3	U-77(2.5-3)					
U-077	7.5	8	U-77(7.5-8)					
U-078	2.5	3.5	U-78(2.5-3.5)					
U-078	7.5	8	U-78(7.5-8)					
U-079C	3	3.5	U-79C(3-3.5)					
U-079C	7.5	8	U-79C(7.5-8)					
U-081	7	7.3						U-81(7-7.3)
U-081	7.5	8	U-81(7.5-8)					

Table 4
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Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-082	1.5	2	U-82(1.5-2)	U-82(1.5-2)	U-82(1.5-2)			
U-082	11	11.3				U-82(11-11.3)		
U-082	11.5	12	U-82(11.5-12)					
U-083	2.5	3	U-83(2.5-3)	U-83(2.5-3)	U-83(2.5-3)			
U-083	11.5	12	U-83(11.5-12)					
U-084	2.5	3	U-84(2.5-3)	U-84(2.5-3)	U-84(2.5-3)			
U-084	7.5	7.5						U-84(7.5)
U-084	7.5	8	U-84(7.5-8)					
U-085	2.5	3	U-85(2.5-3)					
U-085	7.5	8	U-85(7.5-8)					
U-086A	15.5	16						U-86 (15.5-16)
U-086B	2.5	3	U-86B (2.5-3)					
U-086B	19.5	20	U-86B (19.5-20)					
U-087	2.5	3	U-87(2.5-3)	U-87(2.5-3)	U-87(2.5-3)			
U-087	5.5	8						U-87(5.5-8)
U-087	5.8	6				U-87(5.8-6)		
U-087	6.5	8	U-87(6.5-8)	U-87(6.5-8)	U-87(6.5-8)			
U-088	4	4.5						U-88(4.4.5)
U-089	2	3	U-89 (2-3)	U-89 (2-3)	U-89 (2-3)			
U-089B	2.5	3	U-89B (2.5-3)					
U-089B	7.5	8	U-89B (7.5-8)					
U-090	1	2	U-90(1-2)	U-90(1-2)	U-90(1-2)			
U-090	2	2.3						U-90(2-2.3)
U-091	2	2.3						U-91(2-2.3)
U-091	2.5	3	U-91(2.5-3)	U-91(2.5-3)	U-91(2.5-3)			
U-092	2	2.5	U-92 (2-2.5)	U-92 (2-2.5)	U-92 (2-2.5)			
U-092	16.5	17				U-92 (16.5-17)		
U-092	19	19.5						U-92 (19-19.5)
U-092	19.5	20	U-92 (19.5-20)					
U-093	1	2.5	U-93 (1-2.5)	U-93 (1-2.5)	U-93 (1-2.5)			
U-093	17	17.5				U-93 (17-17.5)		
U-093	19	19.5	U-93 (19-19.5)					
U-093	19.5	20						U-93 (19.5-20)
U-094	2.5	4	U-94(2.5-4)					
U-094	9	9				U-94(9)		
U-094	10	10						U-94(10)
U-094	11.5	12	U-94(11.5-12)	U-94(11.5-12)	U-94(11.5-12)			
U-095	2.5	3.5	U-95 (2.5-3.5)	U-95 (2.5-3.5)	U-95 (2.5-3.5)			
U-095	17	17.5				U-95 (17-17.5)	U-95 (17-17.5)	

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Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-095	19	19.5	U-95 (19-19.5)					
U-095	19.5	20						U-95 (19.5-20)
U-096B	1.5	2.5	U-96B (1.5-2.5)	U-96B (1.5-2.5)	U-96B (1.5-2.5)			
U-096B	14	15						U-96B (14-15)
U-096B	19	19.5	U-96B (19-19.5)					
U-096B	19.5	20						U-96B (19.5-20)
U-097	2.5	3.5	U-97(2.5-3.5)	U-97(2.5-3.5)	U-97(2.5-3.5)			
U-097	8	8						U-97(8)
U-097	8.5	8.5				U-97(8.5)		
U-097	19.5	20	U-97(19.5-20)					
U-098	2	2.5				U-98 (2.0-2.5)		
U-098	2.5	3.5	U-98 (2.5-3.5)					
U-098	12	12						U-98 (12)
U-098	19.5	20	U-98 (19.5-20)					
U-099	11	11.5	U-99 (11-11.5)	U-99 (11-11.5)	U-99 (11-11.5)			
U-099	12	12.5						U-99 (12-12.5)
U-099	19.5	20	U-99 (19.5-20)					
U-100	3.5	4	U-100 (3.5-4)					
U-100B	3.5	4	U-100B (3.5-4)					
U-100C	3	3.5	U-100C (3-3.5)	U-100C (3-3.5)	U-100C (3-3.5)			
U-100C	13.5	14						U-100C (13.5-14)
U-100C	19	19.5	U-100C (19-19.5)					
U-100C	19.5	20						U-100 C (19.5-20)
U-101	5.5	6						U-101 (5.5-6)
U-101	11	11.5	U-101 (11-11.5)					
U-101	11.5	12						U-101 (11.5-12)
U-102	1.5	3	U-102 (1.5-3)	U-102 (1.5-3)	U-102 (1.5-3)			
U-102	7	7.5				U-102 (7-7.5)		
U-102	7.5	8	U-102 (7.5-8)					
U-103	2	2.5	U-103 (2-2.5)					
U-103	7.5	8	U-103 (7.5-8)					U-103 (7.5-8)
U-104	1	1.5	U-104 (1-1.5)					
U-105	1	1.5	U-105 (1-1.5)	U-105 (1-1.5)	U-105 (1-1.5)			
U-105	1.5	2	U-105 (1.5-2)	U-105 (1.5-2)	U-105 (1.5-2)			
U-105	5	5						U-105 (5)
U-105	5.5	5.5				U-105 (5.5)		
U-106	1.5	2.5	U-106(1.5-2.5)					
U-106	7	7.5				U-106(7-7.5)		
U-106	7.5	8						U-106(7.5-8)

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Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-106	19.5	20	U-106(19.5-20)					
U-107B	3.5	4	U-107B (3.5-4)	U-107B (3.5-4)	U-107B (3.5-4)			
U-107B	19	19						U-107B (19)
U-107B	19.5	20	U-107B (19.5-20)					
U-108	1.5	2.5	U-108 (1.5-2.5)					
U-108	15	15						U-108 (15)
U-108	18	18						U-108 (18)
U-108	18	18.5				U-108 (18-18.5)	U-108 (18-18.5)	
U-108	19.5	20	U-108 (19.5-20)					
U-109	2	2.5	U-109(2-2.5)	U-109(2-2.5)	U-109(2-2.5)			
U-109	6	7						U-109(6-7)
U-109	6.5	7				U-109(6.5-7)		
U-109	19.5	20	U-109(19.5-20)					
U-110	1	1.5	U-110(1-1.5)	U-110(1-1.5)	U-110(1-1.5)			
U-110	2.5	3						U-110(2.5-3)
U-110	10	12.5	U-110(10-12.5)	U-110(10-12.5)	U-110(10-12.5)			
U-110	11	11				U-110(11)		
U-110	12	12						U-110(12)
U-111	1.5	2	U-111(1.5-2)					
U-111	11.5	11.5				U-111(11.5)		
U-111	11.5	12	U-111(11.5-12)					
U-111	12	12						U-111(12)
U-112	1.5	2	U-112 (1.5-2)	U-112 (1.5-2)	U-112 (1.5-2)			
U-112	2	2.5	U-112 (2-2.5)	U-112 (2-2.5)	U-112 (2-2.5)			
U-112	5	5						U-112 (5)
U-112	5.5	5.5				U-112 (5.5)		
U-112	19.5	20	U-112 (19.5-20)					
U-113	7.5	7.5				U-113(7.5)		
U-113	7.5	8						U-113(7.5-8)
U-113	19.5	20	U-113(19.5-20)					
U-113B	1	2	U-113B(1-2)	U-113B(1-2)	U-113B(1-2)			
U-114	1.5	4	U-114(1.5-4)	U-114(1.5-4)	U-114(1.5-4)			
U-114	6	7	U-114(6-7)	U-114(6-7)	U-114(6-7)			
U-114	15	15.5						U-114(15-15.5)
U-114	18.5	19						U-114(18.5-19)
U-114	19	20	U-114(19-20)	U-114(19-20)	U-114(19-20)			
U-115	2	3	U-115(2-3)	U-115(2-3)	U-115(2-3)			
U-115	17	17				U-115(17)		
U-115	18.5	19.5	U-115(18.5-19.5)	U-115(18.5-19.5)	U-115(18.5-19.5)			

Table 4
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Sample Identification and Analytical Summary

Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-115	19.5	19.5						U-115(19.5)
U-116	1	2.5	U-116(1-2.5)					
U-116	18.5	19						U-116 (18.5-19)
U-116	19	20	U-116(19-20)					
U-116	39	39.5						U-116 (39-39.5)
U-116	39.5	40	U-116(39.5-40)					
U-117	1	2.5	U-117(1-2.5)	U-117(1-2.5)	U-117(1-2.5)			
U-117	28	28						U-117(28)
U-117	39	39						U-117(39)
U-117	39.5	40	U-117(39.5-40)	U-117(39.5-40)	U-117(39.5-40)			
U-118	7	8	U-118(7-8)					
U-118	19.5	20	U-118(19.5-20)					
U-118	21	21.5						U-118(21-21.5)
U-118	38	39	U-118(38.0-39.0)					
U-118	39.5	40						U-118(39.5-40)
U-119	1.5	2.5	U-119(1.5-2.5)					
U-119	17.5	18.5	U-119(17.5-18.5)					
U-119	18.5	19						U-119 (18.5-19)
U-120	2	3	U-120 (2-3)					
U-120	8.5	9						U-120 (8.5-9)
U-120	18.5	19						U-120 (18.5-19)
U-120	19.5	20	U-120 (19.5-20)					
U-120	39	39.5						U-120 (39-39.5)
U-120	39	40	U-120 (39-40)					
U-121	1.5	2	U-121(1.5-2)					
U-121	19	19				U-121(19)		
U-121	19.5	19.5	U-121(19.5)					
U-121	20	20						U-121(20)
U-122	0.5	1.5	U-122(0.5-1.5)					
U-122	18.5	19						U-122(18.5-19.0)
U-122	19	20	U-122(19.0-20.0)					
U-123	10.5	11						U-123 (10.5-11)
U-123	11	12	U-123 (11-12)					
U-124	3	4	U-124(3-4)					
U-124	14	14.5						U-124 (14-14.5)
U-124	19	20	U-124(19-20)					
U-124	33	34						U-124 (33-34)
U-124	38.5	40						U-124 (38.5-40)
U-124	39	40	U-124(39-40)					

Table 4
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Sample Identification and Analytical Summary

Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-125	3	3.5	U-125(3-3.5)					
U-125	5	6						U-125 (5-6)
U-125	18.5	19						U-125 (18.5-19)
U-125	19	20	U-125(19-20)					
U-126	10.5	11						U-126 (10.5-11)
U-126	11.5	12	U-126(11.5-12)					
U-127	2	3	U-127(2-3)					
U-127	18.5	19.5	U-127(18.5-19.5)					
U-127	19.5	20						U-127 (19.5-20)
U-128	6	6.5						U-128 (6-6.5)
U-128	6.5	7.5	U-128(6.5-7.5)					
U-128	19	19.5						U-128 (19-19.5)
U-128	19.5	20	U-128(19.5-20)					
U-128	39.5	40	U-128(39.5-40)					U-128 (39.5-40)
U-129	2	2.5	U-129(2-2.5)					
U-129	6.5	7	U-129(6.5-7)					
U-129	18.5	19.5	U-129(18.5-19.5)					
U-129	19.5	20						U-129 (19.5-20)
U-129	38.5	39.5	U-129 (38.5-39.5)					
U-129	39.5	40						U-129 (39.5-40)
U-130	1.5	2.5	U-130 (1.5-2.5)					
U-130	21	21.5						U-130 (21-21.5)
U-130	21.5	22.5	U-130 (21.5-22.5)					
U-130	38.5	39.5	U-130 (38.5-39.5)					
U-130	39.5	40						U-130 (39.5-40)
U-131	0.5	2	U-131 (0.5-2)	U-131 (0.5-2)	U-131 (0.5-2)			
U-131	18.5	19.5	U-131 (18.5-19.5)					
U-131	19.5	20						U-131 (19.5-20)
U-131	38.5	39.5	U-131 (38.5-39.5)					
U-131	39.5	40						U-131 (39.5-40)
U-132	11	12						U-132 (11-12)
U-132	12	13	U-132 (12-13)	U-132 (12-13)	U-132 (12-13)			
U-132	13	13.5	U-132 (13-13.5)	U-132 (13-13.5)	U-132 (13-13.5)			
U-132	14.5	16	U-132 (14.5-16)	U-132 (14.5-16)	U-132 (14.5-16)			
U-132	19.5	20						U-132 (19.5-20)
U-132	23	24	U-132 (23-24)	U-132 (23-24)	U-132 (23-24)			
U-133	2.5	3.5	U-133 (2.5-3.5)	U-133 (2.5-3.5)	U-133 (2.5-3.5)			
U-133	18.5	19.5	U-133 (18.5-19.5)					
U-133	19.5	20						U-133 (19.5-20)

Table 4
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Sample Identification and Analytical Summary

Location	Depth from	Depth to	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	TAL Metals 6010B	Nickel 7471A	VOCs 8260B
U-133	38.5	39.5	U-133 (38.5-39.5)					
U-133	39.5	40						U-133 (39.5-40)
U-134	2	3	U-134 (2-3)					
U-134	18.5	19.5	U-134 (18.5-19.5)					
U-134	19.5	20						U-134 (19.5-20)
U-134	38.5	39.5	U-134 (38.5-39.5)					
U-134	39.5	40						U-134 (39.5-40)
U-135	7	8	U-135 (7-8)					
U-135	18.5	19.5	U-135 (18.5-19.5)					
U-135	19.5	20						U-135 (19.5-20)
U-136	4	4.5				U-136(4-4.5')		U-136(4-4.5')
U-137	5	6						U-137 (5-6)
U-138	5.5	6						U-138(5.5-6)
U-139	6	6.5						U-139(6.0-6.5)
U-139	6.5	7				U-139(6.5-7.0)		
U-140B	3	3.5						U-140B(3-3.5)
U-140B	7	7.5				U-140B(7-7.5)		
U-141	1.5	2						U-141 (1.5-2)
U-142	2.5	3						U-142(2.5-3)
U-143	3.5	4						U-143(3.5-4)
U-144	2	2.5				U-144(2-2.5)		
U-145	1	1.5						U-145 (1-1.5)
U-145	18.5	19						U-145 (18.5-19)
U-146	3.5	4						U-146 (3.5-4)
U-146	7.5	8						U-146 (7.5-8)
U-147	8	9						U-147 (8-9)
U-147	15.5	16						U-147 (15.5-16)

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-001			U-002			U-002			U-003			U-003			U-004		
Client Sample Description	U-1 (7.5-8)			U-2 (0-2)			U-2 (18-20)			PC-2			U-3 (18.5-20)			U-4 (7.5-8)		
Depth	7.5-8 ft			0-2 ft			18-20 ft			18.5-20 ft			18.5-20 ft			7.5-8 ft		
Date Sampled	10/10/02			10/09/02			10/09/02			10/10/02			10/10/02			10/10/02		
Property ID	70 Property			70 Property			70 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.16	0.18	U	13.7	3.7		0.33	0.20	U	0.24	0.15	U	-0.03	0.13	U	0.03	0.15	U
Bismuth 212	0.39	0.55	U	14.3	3.4		0.53	0.50	U	0.05	0.39	U	-0.17	0.36	U	0.06	0.46	U
Bismuth 214	0.197	0.095	U	0.99	0.36		0.110	0.082	U	0.044	0.059	U	0.062	0.072	U	0.229	0.092	
Lead 212	0.161	0.070		13.1	1.7		0.152	0.071		0.092	0.062		0.024	0.056	U	0.162	0.076	
Lead 214	0.171	0.093	U	0.49	0.26		0.212	0.090		0.075	0.070	U	0.102	0.066	U	0.230	0.097	
Potassium 40	5.6	1.4		8.1	2.2		4.9	1.2		3.8	1.1		2.96	0.91		8.0	1.5	
Protactinium 234M	3.8	4.7	U	54	18		-0.7	3.1	U	1.2	3.6	U	3.0	3.0	U	1.5	3.7	U
Radium 226	0.27	0.13	J	0.57	0.32	J	0.18	0.13	J	0.091	0.096	U	0.013	0.085	U	0.17	0.17	U
Radium 228	0.09	0.17	U	11.5	1.8		0.27	0.17	U	0.19	0.14	U	0.06	0.17	U	0.29	0.18	
Thallium 208	0.20	0.12	U	11.9	2.8		0.16	0.11	U	0.115	0.096	U	0.16	0.12	U	0.18	0.12	U
Thorium 232	0.09	0.17	U	11.4	1.8		0.26	0.17		0.18	0.14		0.09	0.17	U	0.28	0.18	
Thorium 234	2.10	0.81		53.4	7.2		0.77	0.53		0.02	0.30	U	0.002	0.32	U	-0.18	0.32	U
Uranium 235	0.02	0.36	U	2.7	1.0		-0.04	0.29	U	-0.38	0.28	UJ	0.004	0.28	U	-0.02	0.31	U
Uranium 238	2.8	1.2		52.1	7.4		0.72	0.74		0.47	0.48	U	-0.21	0.47	U	-0.34	0.63	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-005A			U-005B			U-005C			U-006			U-006B			U-007		
Client Sample Description	U-5A (1-15)			U-5B (4.5)			U-5C(19.5-20)			U-6 (15.5-16)			U-6B(19.5-20)			U-7 (0.5-1.5)		
Depth	1-1.5 ft			4.5-4.5 ft			19.5-20 ft			15.5-16 ft			19.5-20 ft			0.5-1.5 ft		
Date Sampled	10/10/02			10/10/02			10/17/02			10/10/02			10/17/02			10/11/02		
Property ID	70 Property			70 Property			70 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	5.4	1.6		0.24	0.17	U	0.13	0.12	U	0.11	0.14	U	0.23	0.13	U	0.90	0.38	
Bismuth 212	8.7	3.0		0.65	0.46	U	-0.004	0.38	U	0.22	0.39	U	0.00006	0.36	U	1.16	0.95	U
Bismuth 214	0.59	0.33		0.191	0.097	U	0.072	0.064	U	0.167	0.079	U	0.061	0.066	U	0.61	0.23	
Lead 212	5.62	0.76		0.179	0.080		0.038	0.046	U	0.076	0.055	U	0.081	0.059		0.62	0.17	
Lead 214	0.87	0.31		0.110	0.074	U	0.071	0.055	U	0.081	0.066	U	0.112	0.074	U	0.51	0.19	
Potassium 40	9.7	2.8		5.2	1.2		2.7	1.4		4.0	1.0		3.80	0.99		8.3	1.9	
Protactinium 234M	154	28		-0.04	4.3	U	-0.1	3.7	U	-0.4	3.5	U	-1.9	3.1	U	69	17	
Radium 226	0.98	0.30	J	0.07	0.12	U	0.047	0.093	U	0.176	0.098	J	0.128	0.091	U	0.38	0.34	J
Radium 228	4.44	0.99		0.07	0.18	U	0.07	0.12	U	0.14	0.16	U	0.02	0.12	U	0.48	0.33	U
Thallium 208	5.2	1.4		0.17	0.12	U	0.026	0.092	U	0.09	0.10	U	0.074	0.099	U	0.43	0.29	U
Thorium 232	4.39	0.98		0.05	0.18	U	0.08	0.12	U	0.13	0.16		0.001	0.12	U	0.49	0.33	
Thorium 234	120	16		-0.006	0.32	U	0.31	0.33	U	-0.02	0.25	U	-0.27	0.25	UJ	58.4	7.8	
Uranium 235	5.9	1.6		-0.03	0.31	U	0.07	0.25	U	0.03	0.26	U	-0.19	0.26	U	1.61	0.65	
Uranium 238	126	16		-1.05	0.58	UJ	-0.30	0.46	U	-0.76	0.45	UJ	0.25	0.48	U	62.5	8.1	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-007			U-008			U-008			U-009			U-009			U-011		
Client Sample Description	U-7 (7.5-8)			U-8 (1-1.5)			U-8 (15-15.5)			U-9 (1-1.5)			U-9(19.5-20)			PMC-4		
Depth	7.5-8 ft			1-1.5 ft			15-15.5 ft			1-1.5 ft			19.5-20 ft			2.5-3 ft		
Date Sampled	10/11/02			10/12/02			10/12/02			10/11/02			10/17/02			10/11/02		
Property ID	70 Property			70 Property			70 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.45	0.26	U	0.86	0.43		0.06	0.13	U	0.84	0.41		0.06	0.14	U	0.07	0.14	U
Bismuth 212	0.16	0.48	U	0.88	0.88	U	0.15	0.40	U	0.87	0.89	U	0.39	0.47	U	0.50	0.52	U
Bismuth 214	0.41	0.14		0.80	0.24		0.090	0.071	U	0.53	0.20		0.139	0.088	U	0.068	0.087	U
Lead 212	0.45	0.12		0.65	0.16		0.065	0.053		0.77	0.18		0.020	0.051	U	0.083	0.068	U
Lead 214	0.29	0.11		0.46	0.17		0.080	0.055	U	0.63	0.19		0.130	0.070	U	0.134	0.083	U
Potassium 40	6.4	1.5		7.6	2.0		5.2	1.2		10.9	2.0		4.7	1.2				
Protactinium 234M	4.8	4.0	U	32	12		-0.5	2.8	U	12.2	8.1	U	-1.2	3.6	U	28.9	9.3	
Radium 226	0.33	0.20	J	0.65	0.27	J	0.071	0.092	U	0.67	0.19	J	0.08	0.11	U	0.02	0.11	U
Radium 228	0.40	0.24	U	0.66	0.32		0.1	0.14	U	0.76	0.42		0.02	0.17	U	0.02	0.20	U
Thallium 208	0.28	0.17	U	0.67	0.33		0.101	0.090	U	0.69	0.33		0.077	0.091	U	0.08	0.11	U
Thorium 232	0.40	0.24		0.61	0.15		0.11	0.14	J	0.75	0.42		0.02	0.17	U	-0.01	0.20	U
Thorium 234	-0.21	0.40	U	31.3	4.6		-0.20	0.26	U	5.4	1.6		-0.03	0.32	U	14.7	2.5	
Uranium 235	0.06	0.37	U	1.21	0.75	J	-0.05	0.28	U	0.60	0.61		0.08	0.26	U	0.76	0.45	
Uranium 238	-0.16	0.73	U	33.4	4.9		-0.30	0.45	U	6.8	1.9		-0.35	0.52	U	16.7	2.7	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-011			U-011			U-012			U-012			U-012			U-013		
Client Sample Description	U-11 (2.5-3)			U-11 (7.5-8)			MSB-20			U-12(15-16)			U-12(2-3)			U-13(1-2)		
Depth	2.5-3 ft			7.5-8 ft			15-16 ft			15-16 ft			2-3 ft			1.5-2.5 ft		
Date Sampled	10/11/02			10/11/02			10/16/02			10/16/02			10/16/02			10/16/02		
Property ID	70 Property			70 Property			70 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.74	0.31		0.08	0.12	U	0.14	0.12	U	0.11	0.11	U	5.3	1.6		0.45	0.29	U
Bismuth 212	1.59	0.81	U	0.48	0.41	U	0.25	0.38	U	0.26	0.38	U	6.2	2.2		0.35	0.84	U
Bismuth 214	0.31	0.15		0.098	0.077	U	0.055	0.062	U	0.059	0.063	U	0.62	0.26		0.22	0.14	U
Lead 212	0.68	0.14		0.065	0.052	U	-0.030	0.040	U	-0.037	0.047	U	3.73	0.58		0.55	0.14	
Lead 214	0.49	0.15		0.031	0.055	U	0.028	0.051	U	0.014	0.054	U	0.68	0.22		0.43	0.22	
Potassium 40	7.0	2.0		4.1	1.1		3.5	1.0		4.20	0.996		9.1	2.1		6.7	1.4	
Protactinium 234M	25	11		1.4	3.5	U	0.4	3.0	U	-0.3	3.8	U	73	20		102	20	
Radium 226	0.53	0.22	J	0.045	0.097	U	-0.011	0.097	U	-0.003	0.095	U	0.89	0.38	J	0.03	0.19	U
Radium 228	0.56	0.31	U	0.03	0.14	U	0.10	0.14	U	0.10	0.13	U	3.52	0.83		0.60	0.33	
Thallium 208	0.77	0.30		0.185	0.096	U	0.080	0.091	U	0.040	0.090	U	3.9	1.1		0.45	0.28	
Thorium 232	0.55	0.30		0.03	0.14	U	0.10	0.14	J	0.09	0.13	J	3.48	0.82		0.59	0.32	
Thorium 234	18.1	2.8		-0.20	0.26	U	0.40	0.43	U	0.63	0.42	U	75	10		81	11	
Uranium 235	0.90	0.38		-0.006	0.27	U	0.08	0.25	U	0.02	0.27	U	3.6	1.1		4.5	1.4	
Uranium 238	18.8	3.2		-0.39	0.44	U	-0.03	0.51	U	0.52	0.56	U	77	10		85	11	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-013			U-014			U-014			U-015			U-015			U-016A		
Client Sample Description	U-13(15.5-16)			U-14(1.5-2.5)			U-14(19-20)			U-15 (18-20)			U-15 (8-10)			U-16A (15.5)		
Depth	15.5-16 ft			1.5-2.5 ft			15-16 ft			18-20 ft			8-10 ft			15.5-15.5 ft		
Date Sampled	10/16/02			10/16/02			10/16/02			10/08/02			10/08/02			10/08/02		
Property ID	70 Property			70 Property			70 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.10	0.10	U	1.24	0.59		0.15	0.16	U	0.62	0.26		1.35	0.49		0.036	0.018	
Bismuth 212	0.07	0.42	U	1.1	1.3	U	0.21	0.40	U	0.29	0.61		2.07	0.96		0.042	0.044	
Bismuth 214	0.089	0.070	U	0.60	0.25		0.153	0.084	U	0.114	0.087		0.28	0.13		0.0090	0.0066	
Lead 212	0.025	0.051	U	0.92	0.22		0.079	0.056		0.43	0.11		1.42	0.24		0.0209	0.0093	
Lead 214	0.088	0.070	U	0.51	0.28		0.068	0.053	U	0.088	0.070	U	0.31	0.14		0.0157	0.0081	
Potassium 40	4.2	1.2		9.5	2.2		3.6	1.0		3.6	1.2		6.0	1.4		0.39	0.11	
Protactinium 234M	1.5	4.7	U	103	31		3.8	3.3	U	14.0	6.3	U	53	15		1.07	0.56	U
Radium 226	0.11	0.12	U	0.62	0.44	J	0.20	0.10	J	0.18	0.12	J	0.17	0.19	U	0.0117	0.0092	U
Radium 228	0.1	0.17	U	0.68	0.54	U	-0.06	0.17	U	0.50	0.28		1.16	0.44		0.029	0.019	U
Thallium 208	0.03	0.10	U	1.31	0.51		-0.008	0.11	U	0.31	0.21	U	1.24	0.39		0.024	0.014	U
Thorium 232	0.09	0.17	U	0.67	0.54		-0.05	0.17	U	0.49	0.28		1.15	0.43		0.029	0.019	
Thorium 234	0.51	0.54	U	101	13		-0.23	0.27	U	9.2	1.6		41.4	5.6		0.84	0.15	
Uranium 235	0.17	0.30	U	4.3	1.6		-0.13	0.24	U	0.49	0.44		2.58	0.65		0.017	0.033	U
Uranium 238	0.44	0.62	U	113	15		-0.71	0.51	UJ	8.0	1.9		44.4	6.0		0.80	0.18	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-016A			U-016D			U-017			U-017			U-018			U-018		
Client Sample Description	U-16A(3.5-6.5)			U-16D (19.5-20)			U-17(19.5-20)			U-17(7-8)			U-18(19.5-20)			U-18(2.5-3.0)		
Depth	3.5-6.5 ft			19.5-20 ft			19.5-20 ft			7-8 ft			19.5-20 ft			2.5-3 ft		
Date Sampled	10/16/02			10/18/02			10/18/02			10/18/02			10/17/02			10/17/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	2.98	0.94		0.37	0.19	U	0.03	0.11	U	0.35	0.21	U	0.45	0.21		0.69	0.31	
Bismuth 212	3.1	1.3		-0.008	0.40	U	0.39	0.41	U	0.28	0.56	U	0.33	0.42	U	0.99	0.83	U
Bismuth 214	0.26	0.14	U	0.062	0.072	U	0.036	0.057	U	0.100	0.095	U	0.100	0.067	U	0.44	0.18	
Lead 212	3.16	0.45		0.225	0.073		0.028	0.045	U	0.25	0.10		0.294	0.087		0.57	0.14	
Lead 214	0.38	0.16		0.071	0.066	U	0.099	0.057	U	0.033	0.086	U	0.017	0.059	U	0.39	0.16	
Potassium 40	7.0	1.7		5.3	1.4		2.76	0.97		5.6	1.3		2.66	0.96		5.6	1.5	
Protactinium 234M	73	16		8.7	4.9	U	5.5	4.4	U	56	16		1.4	3.7	U	25	12	
Radium 226	0.61	0.24	J	-0.036	0.098	U	0.129	0.091	J	0.14	0.15	U	0.0281	0.0995	U	0.20	0.19	U
Radium 228	3.00	0.65		0.20	0.21	U	0.12	0.11	U	0.13	0.21	U	0.21	0.18	U	0.73	0.34	
Thallium 208	2.95	0.80		0.18	0.16	U	-0.010	0.075	U	0.15	0.14	U	0.24	0.14	U	0.65	0.25	
Thorium 232	2.97	0.64		0.19	0.21	J	0.12	0.11	J	0.16	0.21	U	0.18	0.17	J	0.72	0.33	J
Thorium 234	56.5	8.0		6.6	1.4		3.79	0.82		44.1	6.3		3.70	0.89		20.2	2.9	
Uranium 235	2.9	1.3		-0.23	0.40	U	0.09	0.27	U	2.62	0.89		-0.12	0.31	U	0.96	0.40	
Uranium 238	63.5	8.4		7.5	1.7		3.5	1.1		50.4	6.7		3.7	1.1		19.0	3.4	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-019			U-019			U-019			U-020			U-020			U-021		
Client Sample Description	MSB-160			U-19(19.5-20)			U-19(2-3.5)			U-20 (19.5)			U-20(2.5-3)			MSB-170 (DUP)		
Depth	2-3.5 ft			19.5-20 ft			2-3.5 ft			19.5-19.5 ft			2.5-3 ft			18-20 ft		
Date Sampled	10/18/02			10/18/02			10/18/02			10/08/02			10/16/02			10/19/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	6.8	1.9		0.02	0.13	U	6.9	1.9		0.14	0.13	U	1.51	0.56		0.06	0.18	U
Bismuth 212	4.5	2.1		0.12	0.44	U	7.7	2.6		-0.19	0.40	U	1.5	1.1	U	0.38	0.36	U
Bismuth 214	0.26	0.20	U	0.090	0.083	U	0.26	0.18	U	0.016	0.069	U	0.26	0.12		0.095	0.067	U
Lead 212	5.72	0.80		0.018	0.051	U	6.71	0.89		0.073	0.050	U	1.49	0.23		0.064	0.065	U
Lead 214	0.21	0.19	U	0.104	0.065	U	0.36	0.22		0.087	0.060	U	0.26	0.13		0.087	0.071	U
Potassium 40	6.7	1.7		2.9	1.2		6.3	1.8		4.15	0.98		6.1	1.4		3.39	0.99	
Protactinium 234M	100	20		2.1	3.8	U	83	20		5.9	6.4	U	39	11		1.6	3.6	U
Radium 226	0.37	0.17	J	-0.03	0.11	U	0.11	0.27	U	0.12	0.10	U	0.26	0.19	J	-0.0004	0.086	U
Radium 228	4.94	0.97		0.01	0.16	U	5.9	1.3		0.21	0.15	U	1.40	0.53		0.16	0.16	U
Thallium 208	6.1	1.6		0.079	0.081	U	6.3	1.6		0.035	0.094	U	1.55	0.48		0.14	0.11	U
Thorium 232	4.89	0.96		0.03	0.16	U	5.8	1.3		0.20	0.14		1.39	0.53		0.14	0.16	J
Thorium 234	64.9	8.6		-0.02	0.28	U	61.5	8.2		5.6	1.2		40.6	5.5		0.52	0.34	U
Uranium 235	3.2	1.0		-0.05	0.26	U	3.17	0.998		0.17	0.32	U	2.2	1.2		0.01	0.29	U
Uranium 238	58.3	7.8		-0.35	0.46	U	61.8	8.8		6.5	1.4		40.3	5.5		0.74	0.57	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-021			U-021			U-022			U-022			U-023			U-024		
Client Sample Description	U-21 (1.5-2)			U-21 (18-20)			U-22 (7.5-7.8)			U-22(2.0-2.5)			U-23 (11.5-12)			U-24 (11.5-12)		
Depth	1.5-2 ft			18-20 ft			7.5-7.8 ft			2-2.5 ft			11.5-12 ft			11.5-12 ft		
Date Sampled	10/19/02			10/19/02			10/08/02			10/16/02			10/12/02			10/13/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.84	0.38		0.23	0.15	U	0.30	0.21	U	0.48	0.23		0.41	0.21		0.50	0.26	U
Bismuth 212	1.96	0.90	U	0.17	0.39	U	0.25	0.54	U	0.36	0.51	U	0.79	0.49	U	0.98	0.71	U
Bismuth 214	0.91	0.23		0.135	0.068	U	0.35	0.13		0.41	0.13		0.26	0.11		0.49	0.15	
Lead 212	0.76	0.18		0.007	0.044	U	0.36	0.11		0.38	0.10		0.218	0.089		0.53	0.13	
Lead 214	0.73	0.20		0.060	0.056	U	0.16	0.11	U	0.30	0.11		0.26	0.11		0.46	0.15	
Potassium 40	5.4	1.5		2.68	0.88		6.8	1.5		6.3	1.6		5.5	1.3		10.4	2.0	
Protactinium 234M	65	16		0.8	3.1	U	10.6	5.7	U	8.3	8.2		-0.2	4.4	U	1	4.3	U
Radium 226	0.59	0.30	J	0.016	0.090	U	0.18	0.15	U	0.41	0.16	J	0.25	0.14	J	0.66	0.23	J
Radium 228	0.68	0.37	U	-0.06	0.14	U	0.46	0.24		0.31	0.20	U	0.25	0.20	U	0.39	0.27	U
Thallium 208	0.73	0.32		0.051	0.080	U	0.44	0.20		0.32	0.22		0.25	0.15	U	0.54	0.22	
Thorium 232	0.67	0.36		-0.06	0.14	U	0.338	0.099		0.31	0.20		0.28	0.19		0.38	0.26	J
Thorium 234	45.1	6.6		0.55	0.35	U	7.9	1.5		8.4	1.6		-0.07	0.35	U	0.22	0.47	U
Uranium 235	2.1	1.3		0.13	0.28	U	0.47	0.45		0.11	0.44	U	0.07	0.34	U	0.11	0.39	U
Uranium 238	55.7	6.9		0.70	0.64	U	7.9	1.8		9.3	1.8		-0.43	0.60	U	-0.54	0.82	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-024			U-025			U-025			U-026			U-026			U-027		
Client Sample Description	U-24 (2.5-3)			U-25 (11.5-12)			U-25 (2-2.5)			U-26 (11.5-12)			U-26 (3-4)			U-27 (11.5-12)		
Depth	2.5-3 ft			11.5-12 ft			2-2.5 ft			11.5-12 ft			3-4 ft			11.5-12 ft		
Date Sampled	10/13/02			10/12/02			10/12/02			10/12/02			10/12/02			10/13/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.76	0.38		0.24	0.20	U	2.49	0.81		0.56	0.34		8.8	2.4		0.23	0.16	U
Bismuth 212	1.25	0.83	U	0.06	0.48	U	1.92	0.97	U	0.74	0.82	U	9.9	3.4		0.24	0.39	U
Bismuth 214	0.64	0.20		0.231	0.097		0.48	0.16		0.60	0.19		0.22	0.21	U	0.160	0.088	U
Lead 212	0.55	0.16		0.135	0.078		2.13	0.32		0.56	0.15		8.1	1.1		0.122	0.050	
Lead 214	0.41	0.16		0.091	0.091	U	0.39	0.18		0.35	0.16		0.44	0.26		0.184	0.069	
Potassium 40	8.2	2.0		5.8	1.4		6.5	1.7		7.7	1.9		5.2	1.8		5.4	1.2	
Protactinium 234M	43	14		2.1	3.5	U	28	10		4.0	4.2	U	212	34		5.5	3.9	U
Radium 226	0.61	0.25	J	0.17	0.12	J	0.32	0.54	J	0.56	0.20	J	0.41	0.21	J	0.116	0.097	U
Radium 228	0.55	0.37	U	0.14	0.22	U	1.89	0.49		0.32	0.27	U	7.1	1.3		0.18	0.14	U
Thallium 208	0.61	0.30		0.20	0.15	U	2.17	0.62		0.36	0.23	U	8.0	2.0		0.12	0.10	U
Thorium 232	0.54	0.37	J	0.15	0.22	J	1.87	0.49		0.53	0.14		7.0	1.3		0.18	0.14	J
Thorium 234	35.2	4.8		-0.09	0.34	U	25.9	3.6		-0.29	0.51	U	150	20		1.77	0.52	
Uranium 235	1.25	0.97		-0.02	0.33	U	0.90	0.45	J	0.06	0.46	U	8.3	2.0		-0.40	0.29	UJ
Uranium 238	32.8	5.5		-0.30	0.55	U	24.3	3.8		1.25	0.89		168	21		0.97	0.76	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-027			U-028			U-028			U-029			U-029			U-030		
Client Sample Description	U-27 (2-2.5)			U-28 (1.5-2)			U-28 (7.5-8)			U-29 (1-1.5)			U-29 (7.5-8)			U-30 (2.5-3)		
Depth	2-2.5 ft			1.5-2 ft			7.5-8 ft			1-1.5 ft			7.5-8 ft			2.5-3 ft		
Date Sampled	10/13/02			10/12/02			10/12/02			10/12/02			10/12/02			10/12/02		
Property ID	100 Property			140 Property			140 Property			140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.64	0.42	U	1.13	0.49		0.45	0.21		1.02	0.46		0.32	0.18	U	1.03	0.41	
Bismuth 212	1.8	1.6	U	1.1	1.0	U	0.05	0.46	U	1.11	0.94	U	0.05	0.50	U	1.54	0.90	U
Bismuth 214	0.30	0.30	U	0.78	0.23		0.20	0.10		0.81	0.20		0.26	0.13		0.52	0.20	
Lead 212	0.52	0.23		0.94	0.20		0.242	0.076		0.75	0.17		0.308	0.089		0.78	0.18	
Lead 214	0.61	0.41		0.75	0.20		0.309	0.089		0.80	0.21		0.291	0.097		0.71	0.19	
Potassium 40	5.8	1.8		9.7	2.5		5.2	1.1		8.4	2.0		6.2	1.4		7.2	1.9	
Protactinium 234M	358	57		-1.3	6.9	U	3.5	3.6	U	7.4	7.3	U	2.1	3.8	U	-1.0	6.9	U
Radium 226	0.10	0.30	U	0.70	0.23	J	0.26	0.12	J	0.54	0.22	J	0.29	0.12	J	0.38	0.28	J
Radium 228	0.72	0.52	U	1.04	0.46		0.32	0.18	U	1.02	0.39		0.31	0.19	U	0.91	0.37	
Thallium 208	0.65	0.36		0.79	0.30		0.21	0.13	U	0.98	0.36		0.33	0.15		0.45	0.29	
Thorium 232	0.73	0.52	J	1.03	0.46		0.31	0.18		1.02	0.39		0.30	0.19		0.90	0.37	
Thorium 234	282	37		0.06	0.67	U	-0.12	0.34	U	5.5	1.4		-0.18	0.34	U	0.78	0.64	U
Uranium 235	15.7	3.3		-0.16	0.63	U	-0.51	0.34	UJ	0.16	0.58	U	-0.13	0.31	U	-0.37	0.55	U
Uranium 238	291	35		0.3	1.1	U	-0.08	0.54	U	4.2	1.6		0.26	0.60	U	-0.4	1.0	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-030			U-031			U-031B		
Client Sample Description	U-30 (7.5-8)			U-31 (11.5)			U-31B (19.5-20)		
Depth	7.5-8 ft			11.5-11.5 ft			19.5-20 ft		
Date Sampled	10/12/02			10/08/02			10/14/02		
Property ID	140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g		
Actinium 228	0.51	0.23		1.49	0.56		0.07	0.13	U
Bismuth 212	0.52	0.50	U	1.84	0.997	U	0.34	0.45	U
Bismuth 214	0.21	0.10	U	0.51	0.15		-0.074	0.062	UJ
Lead 212	0.224	0.089		1.35	0.22		0.017	0.052	U
Lead 214	0.16	0.10	U	0.37	0.17		0.041	0.058	U
Potassium 40	6.0	1.5		6.4	1.4		2.84	0.82	
Protactinium 234M	0.2	4.6	U	88	18		9.1	5.2	U
Radium 226	0.22	0.11	J	0.18	0.18	U	-0.083	0.086	U
Radium 228	0.30	0.19	U	0.99	0.44		-0.009	0.14	U
Thallium 208	0.24	0.14	U	1.62	0.46		0.017	0.076	U
Thorium 232	0.29	0.19		0.98	0.43		-0.02	0.14	U
Thorium 234	-0.06	0.37	U	67.1	8.9		7.0	1.3	
Uranium 235	-0.04	0.32	U	3.8	1.4		0.41	0.33	
Uranium 238	-0.34	0.59	U	65.9	8.4		9.4	2.0	

Location	U-032			U-032			U-033		
Client Sample Description	U-32 (19.5-20)			U-32 (2.5-3)			U-33 (1.5-2.5)		
Depth	19.5-20 ft			2.5-3 ft			1.5-2.5 ft		
Date Sampled	10/09/02			10/09/02			10/09/02		
Property ID	140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g		
Actinium 228	0.12	0.13	U	1.62	0.63		1.64	0.59	
Bismuth 212	0.29	0.35	U				2.1	1.1	U
Bismuth 214	-0.014	0.062	U	0.58	0.24		0.53	0.21	
Lead 212	0.070	0.051	U	1.61	0.30		1.34	0.26	
Lead 214	0.057	0.055	U	0.70	0.24		0.65	0.22	
Potassium 40	3.1	1.1		5.7	2.1		9.1	1.9	
Protactinium 234M	1.2	3.2	U	82.5	8.2		90	20	
Radium 226	0.100	0.053	U	0.64	0.33	J	0.92	0.44	J
Radium 228	0.02	0.14	U	2.22	0.71		1.98	0.56	
Thallium 208	-0.01	0.087	U	1.82	0.58		1.44	0.47	
Thorium 232	0.01	0.13	U	2.19	0.70		1.95	0.56	
Thorium 234	0.12	0.28	U	49.0	7.3		72	10	
Uranium 235	-0.41	0.25	UJ	3.1	1.4		3.8	1.4	
Uranium 238	-0.30	0.41	U	49.7	6.9		82	10	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-033B			U-034			U-034			U-035B			U-035B			U-036		
Client Sample Description	U-33B (19.5-20)			U-34 (19.5-20)			U-34 (3-3.5)			U-35B (12-12.5)			U-35B (19-20)			U-36 (14-16)		
Depth	19.5-20 ft			19.5-20 ft			3-3.5 ft			12-12.5 ft			19-20 ft			14-16 ft		
Date Sampled	10/14/02			10/14/02			10/14/02			10/09/02			10/09/02			10/30/02		
Property ID	140 Property			140 Property			140 Property			140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.09	0.13	U	0.15	0.14	U	0.55	0.27		0.14	0.17	U	0.06	0.13	U	0.19	0.15	U
Bismuth 212	0.43	0.38	U	0.19	0.19	U	-0.97	0.89	UJ	0.155	0.072	U	0.080	0.057	U	-0.03	0.50	U
Bismuth 214	0.086	0.068	U	0.062	0.069	U	0.22	0.14	U	0.089	0.077	U	0.080	0.057	U	0.084	0.082	U
Lead 212	0.035	0.055	U	0.030	0.049	U	0.26	0.14		0.026	0.054	U	0.111	0.054		0.102	0.064	
Lead 214	0.088	0.070	U	0.037	0.051	U	0.17	0.15	U	0.155	0.072	U	0.054	0.055	U	0.050	0.066	U
Potassium 40				2.73	0.85		5.2	1.3		5.1	1.4		2.8	1.1		4.7	1.2	
Protactinium 234M	1.6	2.9	U	1.9	2.8	U	172	28		0.4	3.4	U	-0.5	3.4	U	9.0	6.5	
Radium 226	0.22	0.11	J	0.096	0.090	U	0.16	0.19	U	0.03	0.11	U	0.088	0.092	U	0.07	0.11	U
Radium 228	0.09	0.17	U	0.05	0.14	U	0.50	0.29		0.008	0.16	U	-0.03	0.12	U	0.18	0.16	U
Thallium 208	0.031	0.091	U	-0.005	0.071	U	0.54	0.30		0.0237	0.0997	U	0.047	0.094	U	0.1	0.12	U
Thorium 232	0.1	0.16	U	0.06	0.14	U	0.49	0.29		-0.01	0.16	U	-0.03	0.12	U	0.19	0.15	
Thorium 234	-0.47	0.29	U	-0.07	0.23	U	141	18		-0.07	0.29	U	-0.28	0.26	UJ	6.9	1.4	
Uranium 235	-0.10	0.25	U	-0.28	0.25	UJ	6.9	1.5		-0.13	0.32	U	-0.27	0.26	UJ	0.39	0.38	
Uranium 238	-0.08	0.46	U	-0.14	0.44	U	143	17		-0.57	0.54	UJ	-0.24	0.49	U	8.6	2.1	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-036			U-036			U-037			U-037			U-038			U-039		
Client Sample Description	U-36 (18-22)			U-36 (38-40)			U-37(19.5-20)			U-37(3-3.5)			U-38 (19-20)			U-39 (1.5)		
Depth	18-22 ft			38-40 ft			19.5-20 ft			3-3.5 ft			19-19 ft			1.5-1.5 ft		
Date Sampled	10/11/02			10/11/02			10/15/02			10/15/02			10/08/02			10/10/02		
Property ID	140 Property			140 Property			140 Property			140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.16	0.13	U	0.12	0.11	U	0.11	0.12	U	1.16	0.55		0.05	0.14	U	0.90	0.42	
Bismuth 212	0.23	0.50	U	0.36	0.44	U	0.40	0.41	U	-0.04	1.7	U	0.57	0.50	U	0.18	0.87	U
Bismuth 214	0.062	0.069	U	0.063	0.067	U	-0.003	0.061	U	0.53	0.25		0.082	0.086	U	0.38	0.18	
Lead 212	0.073	0.073	U	0.081	0.060		0.048	0.049	U	0.97	0.27		0.089	0.060	U	0.81	0.18	
Lead 214	0.134	0.074	U	0.133	0.067	U	0.033	0.059	U	0.60	0.30		0.133	0.099	U	0.41	0.17	
Potassium 40	3.6	1.0		1.64	0.87		3.0	1.1		8.8	2.0		3.19	0.96		8.3	2.0	
Protactinium 234M	19.3	6.5		11.4	5.5	U	-0.5	3.7	U	591	79		34	11		45	15	
Radium 226	0.11	0.11	U	0.111	0.095	U	-0.029	0.094	U	0.56	0.40	J	-0.08	0.12	U	0.49	0.31	J
Radium 228	-0.0007	0.16	U	0.06	0.14	U	0.11	0.13	U	0.61	0.61	U	0.08	0.19	U	0.68	0.43	
Thallium 208	0.17	0.11	U	0.08	0.11	U	-0.008	0.10	U	0.70	0.49	U	0.04	0.11	U	0.84	0.31	
Thorium 232	0.009	0.16	U	0.03	0.15	U	0.14	0.13		0.64	0.60		0.04	0.19	U	0.68	0.43	
Thorium 234	12.4	2.1		6.9	1.3		-0.29	0.26	UJ	493	67		21.1	3.2		39.1	5.5	
Uranium 235	0.56	0.40		0.09	0.34	U	0.08	0.24	U	25.2	5.3		1.13	0.53		0.91	0.50	
Uranium 238	13.6	2.4		5.5	1.4		-0.03	0.46	U	517	55		24.0	3.4		43.8	6.2	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-039			U-040			U-040			U-041			U-041			U-042		
Client Sample Description	U-39 (7.5-8)			U-40(19.5-20)			U-40(2.5-4)			U-41(18-20)			U-41(2.5-3.0)			U-42 (1-2)		
Depth	7.5-8 ft			19.5-20 ft			2.5-4 ft			18-20 ft			2.5-3 ft			1-2 ft		
Date Sampled	10/10/02			10/15/02			10/15/02			10/15/02			10/15/02			10/14/02		
Property ID	140 Property			140 Property			140 Property			140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.35	0.19	U	0.02	0.12	U	0.41	0.22		0.1	0.12	U	2.11	0.75		13.4	3.6	
Bismuth 212	0.28	0.40	U	0.31	0.36	U	0.24	0.57	U	0.38	0.40	U	1.9	1.2	U	12.7	2.8	
Bismuth 214	0.140	0.089	U	0.022	0.054	U	0.260	0.098		0.049	0.060	U	0.67	0.20		0.24	0.23	U
Lead 212	0.203	0.077		0.009	0.044	U	0.309	0.090		0.079	0.054		1.54	0.24		12.4	1.6	
Lead 214	0.214	0.087		-0.003	0.046	U	0.24	0.10		0.058	0.052	U	0.83	0.20		0.25	0.17	U
Potassium 40	6.0	1.4		2.9	1.2		5.2	1.5		4.1	1.3		9.6	2.4		6.0	1.6	
Protactinium 234M	-0.8	3.9	U	1	2.4	U	0.6	3.9	U	1.6	3.5	U	44	13		86	18	
Radium 226	0.26	0.12	J	-0.029	0.082	U	0.30	0.18	J	0.057	0.078	U	0.80	0.27	J	0.18	0.29	U
Radium 228	0.15	0.17	U	-0.03	0.13	U	0.18	0.19	U	0.005	0.12	U	1.43	0.44		10.6	1.6	
Thallium 208	0.27	0.13		-0.020	0.059	U	0.28	0.15	U	0.12	0.10	U	1.44	0.48		11.0	2.6	
Thorium 232	0.15	0.17		-0.03	0.13	U	0.18	0.19	J	0.009	0.12	U	1.41	0.44		10.5	1.6	
Thorium 234	-0.29	0.32	U	-0.18	0.23	U	0.12	0.36	U	0.006	0.27	U	28.7	4.0		69.1	9.2	
Uranium 235	-0.37	0.33	UJ	-0.03	0.21	U	0.20	0.30	U	-0.51	0.26	UJ	1.78	0.53		3.7	1.0	J
Uranium 238	-0.44	0.52	U	-0.20	0.42	U	-0.46	0.60	U	-0.29	0.46	U	29.2	3.9		65.1	7.4	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-042			U-042			U-043			U-043			U-044			U-044		
Client Sample Description	U-42 (14-18)			U-42 DUP (14-18)			U-43(19-20)			U-43(2.5-3)			U-44(19-20)			U-44(3-4)		
Depth	14-18 ft			14-18 ft			19-20 ft			2.5-3 ft			19-20 ft			3-4 ft		
Date Sampled	10/14/02			10/14/02			10/29/02			10/29/02			10/29/02			10/29/02		
Property ID	140 Property			140 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.34	0.17	U	0.05	0.15	U	0.21	0.14	U	2.94	0.99		0.10	0.12	U	1.38	0.56	
Bismuth 212	0.27	0.41	U	0.22	0.53	U	0.28	0.34	U	2.7	1.4		0.28	0.32	U	0.71	0.83	U
Bismuth 214	0.026	0.071	U	0.133	0.079	U	0.037	0.056	U	0.53	0.23		0.058	0.066	U	0.54	0.20	
Lead 212	0.022	0.052	U	0.064	0.064	U	0.090	0.051		2.69	0.40		0.046	0.046	U	1.06	0.21	
Lead 214	0.028	0.058	U	0.097	0.070	U	0.056	0.058	U	0.58	0.23		0.061	0.051	U	0.62	0.19	
Potassium 40	2.5	1.1		2.94	0.96		2.6	1.1		8.0	1.8		2.2	1.2		8.1	1.8	
Protactinium 234M	30	10		29.8	9.0		-2.7	3.2	U	296	43		-1.2	3.3	U	34	12	
Radium 226	0.13	0.10	J	0.11	0.11	U	-0.050	0.088	U	0.30	0.34	J	0.013	0.095	U	0.58	0.27	J
Radium 228	0.17	0.18	U	0.07	0.17	U	0.16	0.14	U	2.97	0.74		0.17	0.14	U	1.10	0.44	
Thallium 208	0.158	0.0997	U	0.08	0.10	U	0.165	0.095	U	2.57	0.75		0.013	0.081	U	1.46	0.46	
Thorium 232	0.16	0.17	J	0.08	0.17	U	0.16	0.14	J	2.94	0.73		0.17	0.14		1.09	0.43	
Thorium 234	23.9	3.5		18.8	2.9		-0.17	0.27	U	212	28		0.74	0.46		24.4	3.5	
Uranium 235	1.25	0.52	J	1.36	0.55	J	-0.25	0.22	UJ	11.5	2.6		0.21	0.22	U	1.15	0.50	
Uranium 238	26.0	3.6		19.7	3.1		-0.82	0.45	UJ	225	24		0.49	0.58	J	28.0	4.1	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-046			U-046			U-047			U-047			U-048A			U-048A		
Client Sample Description	U-46(19.5-20)			U-46(2.5-3)			U-47(19.5-20)			U-47(6-7)			U-48A (1.5-2.5)			U-48A (6-12)		
Depth	19.5-20 ft			2.5-3 ft			19.5-20 ft			6-7 ft			1.5-2.5 ft			0.5-1 ft		
Date Sampled	10/15/02			10/15/02			10/17/02			10/17/02			10/10/02			10/10/02		
Property ID	140 Property			140 Property			100 Property			100 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.19	0.15	U	4.1	1.3		0.19	0.15	U	0.65	0.27		0.38	0.31	U	0.81	0.55	U
Bismuth 212	0.04	0.32	U	3.7	2.3	U	0.16	0.39	U	0.73	0.63	U	0.79	0.92	U	1.3	1.6	U
Bismuth 214	0.128	0.067	U	0.74	0.33		0.164	0.084	U	0.45	0.13		5.65	0.78		26.3	3.6	
Lead 212	0.10	0.062		3.84	0.56		0.042	0.053	U	0.38	0.10		0.305	0.092		0.41	0.15	
Lead 214	0.066	0.058	U	0.69	0.48		0.092	0.072	U	0.39	0.12		6.22	0.83		25.5	3.1	
Potassium 40	3.7	1.3		9.1	2.2		4.3	1.1		6.0	1.5		3.7	1.5				
Protactinium 234M	1	3.5	U	800	100		2.9	3.6	U	7.8	5.3	U	7.2	7.2	U	41	25	
Radium 226	0.136	0.089	J	0.72	0.69	J	0.03	0.11	U	0.34	0.16	J	5.28	0.78		24.0	3.0	
Radium 228	0.18	0.14	U	3.8	1.2		0.11	0.16	U	0.52	0.25		0.48	0.40	U	1.01	0.77	
Thallium 208	0.003	0.080	U	3.8	1.1		-0.00009	0.088	U	0.37	0.20		0.43	0.22		0.73	0.52	
Thorium 232	0.18	0.14		3.7	1.2		0.11	0.16	J	0.51	0.25	J	0.47	0.40		1.12	0.76	
Thorium 234	-0.20	0.26	U	620	85		-0.07	0.31	U	8.5	1.6		5.8	1.6		15.9	2.5	
Uranium 235	-0.52	0.24	UJ	33.6	6.9		0.08	0.28	U	0.1	0.41	U	0.52	0.79	U	0.5	1.7	U
Uranium 238	0.32	0.51	U	653	70		-0.32	0.53	U	8.1	1.9		5.7	1.8		15.1	6.1	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-048B			U-048B			U-048C			U-048D			U-048D			U-048E		
Client Sample Description	U-48B (6-12)			U-48B (7.5-8)			U-48C (7.5)			U-48D (6-12)			U-48D (7.5-8)			U-48E (6-12)		
Depth	0.5-1 ft			7.5-8 ft			7.5-7.5 ft			0.5-1 ft			7.5-8 ft			0.5-1 ft		
Date Sampled	10/10/02			10/10/02			10/10/02			10/10/02			10/10/02			10/10/02		
Property ID	70 Property			70 Property			70 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.37	0.22	U	0.26	0.17	U	0.30	0.19	U	0.28	0.19	U	0.25	0.19	U	0.27	0.18	U
Bismuth 212	0.53	0.49	U	0.37	0.38	U	0.29	0.37	U	0.28	0.50	U	0.26	0.51	U	0.72	0.61	U
Bismuth 214	0.24	0.11		0.251	0.091		0.29	0.11		0.193	0.088	U	0.124	0.086	U	0.28	0.14	
Lead 212	0.341	0.097		0.206	0.072		0.22	0.10		0.186	0.075		0.076	0.065	U	0.30	0.10	
Lead 214	0.29	0.11		0.143	0.086		0.245	0.096		0.219	0.094		0.144	0.084	U	0.28	0.12	
Potassium 40	6.7	1.4		4.2	1.3		2.62	0.90		3.59	0.997		14.8	2.4		5.9	1.6	
Protactinium 234M	0.07	3.6	U	0.4	3.3	U	0.3	4.1	U	-0.9	3.8	U	-0.9	4.7	U	6.2	5.3	U
Radium 226	0.47	0.18	J	0.19	0.12	J	0.25	0.13	J	0.32	0.12	J	-0.04	0.11	U	0.21	0.15	U
Radium 228	0.38	0.21	U	0.18	0.17	U	0.20	0.20	U	0.33	0.19	U	0.02	0.18	U	0.33	0.22	U
Thallium 208	0.37	0.17		0.122	0.084	U	0.27	0.16	U	0.21	0.14	U	0.17	0.12	U	0.17	0.16	U
Thorium 232	0.39	0.21		0.18	0.17		0.24	0.19		0.32	0.19		0.01	0.18	U	0.32	0.21	
Thorium 234	0.95	0.70		-0.08	0.30	U	-0.18	0.32	U	0.74	0.65		-0.16	0.32	U	0.85	0.52	U
Uranium 235	0.16	0.34	U	-0.38	0.29	UJ	-0.08	0.31	U	0.12	0.37	U	-0.02	0.31	U	0.28	0.37	U
Uranium 238	1.12	0.77		-0.32	0.50	U	-0.41	0.56	U	1.60	0.86		-0.60	0.54	U	1.0	0.83	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-048E			U-049			U-049			U-050			U-050			U-050		
Client Sample Description	U-48E (7.5-8)			U-49(19-20)			U-49(2-3)			MSB200			U-50(18.5-20)			U-50(3-4)		
Depth	7.5-8 ft			19-20 ft			2-3 ft			- ft			18.5-20 ft			3-4 ft		
Date Sampled	10/10/02			10/28/02			10/28/02			10/28/02			10/28/02			10/28/02		
Property ID	70 Property			140 Property			140 Property			140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.20	0.15	U	0.083	0.099	U	0.95	0.39		0.16	0.13	U	-0.02	0.13	U	1.51	0.62	
Bismuth 212	0.29	0.47	U	0.04	0.32	U	1.04	0.79	U	0.19	0.40	U	0.13	0.36	U	2.4	1.3	U
Bismuth 214	0.147	0.076	U	0.097	0.061	U	0.84	0.23		0.074	0.074	U	0.076	0.066	U	1.45	0.35	
Lead 212	0.158	0.061		0.016	0.040	U	0.76	0.19		0.071	0.044		0.058	0.048	U	1.38	0.30	
Lead 214	0.18	0.11		0.025	0.054	U	0.99	0.23		0.10	0.061	U	0.053	0.057	U	1.12	0.28	
Potassium 40	4.8	1.1		1.64	0.74		9.4	1.9		3.1	1.1		3.57	0.90		12.6	2.8	
Protactinium 234M	2.2	3.7	U	0.4	2.3	U	0.1	5.4	U	-1.5	1.2	U	1.2	2.1	U	-3.9	9.2	U
Radium 226	0.104	0.099	U	0.130	0.088	J	1.0	0.30	J	0.046	0.088	UJ	0.108	0.095	U	1.46	0.41	
Radium 228	0.31	0.15	U	0.02	0.13	U	0.63	0.43	U	0.04	0.12	U	0.15	0.12	U	1.71	0.57	
Thallium 208	0.11	0.12	U	0.064	0.084	U	0.85	0.32		0.040	0.083	U	0.077	0.089	U	1.02	0.46	
Thorium 232	0.30	0.15		0.04	0.12	U	0.62	0.43		0.04	0.12	U	0.13	0.12		1.69	0.57	
Thorium 234	-0.04	0.30	U	-0.27	0.22	UJ	0.55	0.59	U	-0.31	0.26	UJ	-0.15	0.24	U	1.05	0.86	U
Uranium 235	-0.39	0.27	UJ	0.05	0.22	U	-0.17	0.56	U	0.004	0.23	U	-0.18	0.25	U	0.25	0.73	U
Uranium 238	-0.36	0.48	U	-0.85	0.41	UJ	0.52	0.99	U	-0.76	0.40	UJ	-0.09	0.45	U	-1.1	1.4	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-051			U-051			U-052			U-052			U-053			U-053		
Client Sample Description	U-51(19-20)			U-51(2-3)			U-52(1-2)			U-52(19-20)			U-53(19.5-20)			U-53(2.5-3.5)		
Depth	19-20 ft			2-3 ft			1-2 ft			19-20 ft			19.5-20 ft			2.5-3.5 ft		
Date Sampled	10/28/02			10/28/02			10/28/02			10/28/02			10/28/02			10/28/02		
Property ID	140 Property			140 Property			140 Property			140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.06	0.11	U	0.31	0.18	U	0.79	0.40		0.16	0.13	U	0.18	0.13	U	0.43	0.27	U
Bismuth 212	-0.11	0.37	U	0.27	0.41	U	1.07	0.75	U	0.38	0.39	U	0.008	0.28	U	1.08	0.71	U
Bismuth 214	0.004	0.057	U	0.241	0.085		0.46	0.15		0.085	0.080	U	-0.003	0.044	U	0.37	0.15	
Lead 212	0.024	0.046	U	0.34	0.10		0.46	0.13		0.134	0.061		0.031	0.043	U	0.39	0.12	
Lead 214	0.004	0.052	U	0.189	0.086		0.34	0.14		0.108	0.074	U	0.040	0.049	U	0.38	0.14	
Potassium 40	2.76	0.85		4.9	1.5		7.1	1.6		4.1	1.1					7.1	1.6	
Protactinium 234M	1.5	3.5	U	-2.3	3.9	U	-0.06	5.0	U	3.0	2.9	U	1.7	3.4	U	1.4	4.7	U
Radium 226	0.13	0.11	J	0.15	0.14	U	0.53	0.22	J	0.116	0.098	U	-0.071	0.079	U	0.47	0.19	J
Radium 228	0.03	0.14	U	0.33	0.16	U	0.37	0.29	U	-0.008	0.14	U	0.13	0.14	U	0.40	0.23	U
Thallium 208	0.066	0.089	U	0.47	0.19		0.29	0.26	U	0.09	0.11	U	0.055	0.076	U	0.36	0.22	U
Thorium 232	0.03	0.14	U	0.324	0.094		0.36	0.29		-0.03	0.14	U	0.12	0.14	J	0.37	0.11	
Thorium 234	-0.004	0.25	U	-0.33	0.32	UJ	-0.35	0.46	U	0.03	0.25	U	-0.23	0.22	UJ	0.55	0.45	U
Uranium 235	-0.08	0.21	U	0.05	0.32	U	-0.19	0.45	U	-0.03	0.26	U	-0.28	0.22	UJ	-0.18	0.43	U
Uranium 238	-0.28	0.43	U	0.06	0.57	U	0.29	0.80	U	-0.82	0.51	UJ	-0.1	0.41	U	0.44	0.73	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-054			U-054			U-055			U-055			U-056			U-056		
Client Sample Description	U-54(19.5-20)			U-54(2.5-3.5)			U-55 (0.5-1.5)			U-55 (19.50-20)			MSB-150(5.5-6)			U-56(0-1)		
Depth	19.5-20 ft			2.5-3.5 ft			0.5-1.5 ft			19.5-20 ft			5.5-6 ft			0-1 ft		
Date Sampled	10/29/02			10/29/02			10/29/02			10/29/02			10/17/02			10/17/02		
Property ID	100 Property			100 Property			100 Property			100 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.30	0.15		6.0	1.7		1.54	0.60		0.12	0.18	U	-0.02	0.13	U	0.36	0.23	U
Bismuth 212	0.24	0.36	U	5.5	2.2		2.3	1.3	U	0.18	0.41	U	0.03	0.50	U	0.83	0.58	U
Bismuth 214	0.037	0.071	U	0.90	0.28		0.80	0.26		0.102	0.088	U	0.150	0.080	U	0.34	0.13	
Lead 212	0.027	0.051	U	4.92	0.67		1.30	0.28		-0.006	0.050	U	0.071	0.068	U	0.39	0.11	
Lead 214	0.078	0.078	U	0.56	0.22		0.85	0.24		0.019	0.064	U	0.076	0.066	U	0.27	0.11	
Potassium 40	3.1	1.1		8.2	2.1		11.3	2.4		2.97	0.98		5.8	1.3		6.8	1.7	
Protactinium 234M	-0.5	3.6	U	148	28		23	10		0.4	4.1	U	-3.5	3.1	U	10.2	6.2	U
Radium 226	0.011	0.088	U	1.08	0.44		1.19	0.39		-0.07	0.10	U	0.041	0.098	U	0.23	0.15	J
Radium 228	0.14	0.14	U	4.1	1.0		1.70	0.58		0.31	0.21	U	-0.0007	0.17	U	0.40	0.25	U
Thallium 208	-0.058	0.080	U	4.3	1.2		1.49	0.54		0.019	0.099	U	-0.02	0.10	U	0.38	0.19	
Thorium 232	0.12	0.14	J	4.04	0.996		1.68	0.57		0.30	0.20		-0.0007	0.17	U	0.40	0.25	J
Thorium 234	-0.06	0.24	U	114	15		23.2	3.8		-0.30	0.30	U	0.25	0.31	U	5.6	1.1	
Uranium 235	-0.23	0.27	U	4.7	1.3		1.01	0.96		-0.19	0.27	U	0.02	0.28	U	0.55	0.41	
Uranium 238	-0.30	0.41	U	121	15		29.2	4.5		-0.76	0.49	UJ	0.25	0.49	U	6.2	1.5	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-056			U-056			U-056			U-057			U-057			U-058		
Client Sample Description	U-56(10.5-11.5)			U-56(19.5-20)			U-56(5.5-6)			U-57(0.5-1.5)			U-57(19.5-20)			U-58 (2.5-3)		
Depth	10.5-11.5 ft			19.5-20 ft			5.5-6 ft			0.5-1.5 ft			19.5-20 ft			2.5-3 ft		
Date Sampled	10/17/02			10/17/02			10/17/02			10/17/02			10/17/02			10/11/02		
Property ID	70 Property			70 Property			70 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.17	0.12	U	0.08	0.14	U	0.20	0.15	U	0.56	0.25		0.05	0.13	U	0.51	0.26	
Bismuth 212	0.18	0.35	U	0.16	0.50	U	0.04	0.41	U	0.35	0.50	U	0.02	0.37	U	0.68	0.61	U
Bismuth 214	0.075	0.057	U	0.060	0.076	U	0.123	0.077	U	0.31	0.14		0.037	0.055	U	0.33	0.13	
Lead 212	0.080	0.059	U	0.106	0.072		0.106	0.073		0.289	0.084		-0.002	0.044	U	0.41	0.12	
Lead 214	0.063	0.057	U	0.110	0.077	U	0.098	0.089	U	0.31	0.10		0.083	0.065	U	0.27	0.11	
Potassium 40	2.74	0.99		2.25	0.82		6.0	1.8		6.5	1.5					6.5	1.5	
Protactinium 234M	-0.7	3.5	U	-2.9	3.0	U	3.3	3.8	U	-0.6	5.4	U	-1.5	3.5	U	12.0	7.3	
Radium 226	-0.072	0.086	U	0.09	0.10	U	0.18	0.10	J	0.45	0.15	J	0.116	0.093	U	0.38	0.15	J
Radium 228	0.18	0.15	U	0.03	0.12	U	0.09	0.14	U	0.27	0.18	U	0.11	0.12	U	0.38	0.23	U
Thallium 208	0.050	0.086	U	0.070	0.097	U	0.05	0.11	U	0.21	0.16	U	-0.034	0.082	U	0.55	0.23	
Thorium 232	0.17	0.15	J	0.05	0.12	U	0.08	0.14	U	0.27	0.17	J	0.11	0.12	J	0.39	0.12	
Thorium 234	-0.39	0.25	UJ	-0.35	0.27	UJ	-0.27	0.30	U	3.93	0.93		-0.14	0.26	U	12.6	2.0	
Uranium 235	-0.31	0.28	UJ	-0.08	0.27	U	0.10	0.26	U	0.27	0.38	U	0.01	0.25	U	1.10	0.51	
Uranium 238	-0.19	0.43	U	-0.12	0.49	U	-0.50	0.57	U	4.6	1.3		-0.44	0.41	UJ	12.8	2.6	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-058			U-059			U-059			U-059			U-060			U-060		
Client Sample Description	U-58 (7.5-8)			U-59 (1.5-2.5)			U-59 (6-1.5)			U-59 (7.5-8)			U-60 (2.5-3)			U-60 (7.5-8)		
Depth	7.5-8 ft			1.5-2.5 ft			0.5-1.5 ft			7.5-8 ft			2.5-3 ft			7.5-8 ft		
Date Sampled	10/11/02			10/11/02			10/11/02			10/11/02			10/11/02			10/11/02		
Property ID	70 Property			70 Property			70 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.24	0.25	U	5.2	1.6		6.9	2.0		0.19	0.20	U	0.83	0.40		0.85	0.42	
Bismuth 212	-0.21	0.42	U	3.8	1.9		8.7	2.7		-0.06	0.46	U	1.01	0.79	U	1.29	0.76	U
Bismuth 214	0.27	0.12		0.63	0.29		0.71	0.31		0.21	0.13	U	0.51	0.19		0.64	0.18	
Lead 212	0.266	0.094		4.62	0.67		6.67	0.87		0.251	0.097		0.59	0.15		0.77	0.15	
Lead 214	0.23	0.11		0.77	0.26		0.67	0.33		0.23	0.10		0.78	0.19		0.55	0.17	
Potassium 40	4.9	1.3		9.1	2.3		10.5	2.3		6.0	1.4		10.6	2.3		8.4	2.0	
Protactinium 234M	6.6	4.7	U	25	11		160	33		-1.2	5.5	U	6.8	7.9	U	-1.3	3.5	U
Radium 226	0.15	0.14	U	0.97	0.27	J	0.80	0.26	J	0.40	0.18	J	0.78	0.24	J	0.50	0.23	J
Radium 228	0.38	0.25	U	6.4	1.2		5.0	1.0		0.30	0.24	U	0.76	0.30		0.92	0.36	
Thallium 208	0.27	0.16	U	4.6	1.2		5.8	1.5		0.30	0.16	U	0.84	0.30		0.84	0.32	
Thorium 232	0.251	0.088		6.3	1.2		4.9	1.0		0.31	0.23		0.55	0.14		0.91	0.36	
Thorium 234	5.5	1.3		19.2	2.9		139	18		1.10	0.50		7.7	1.5		0.08	0.50	U
Uranium 235	0.43	0.41		2.83	0.96		7.3	1.8		-0.13	0.34	U	0.44	0.55	U	0.17	0.48	U
Uranium 238	6.4	1.4		16.6	4.2		141	17		1.3	1.1		7.2	1.9		-0.28	0.88	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-061			U-061			U-062			U-062			U-063			U-063		
Client Sample Description	U-61 (6-1.5)			U-61 (7.5-8)			U-62 (1-1.5)			U-62 (7.5-8)			U-63 (1-1.5)			U-63 (7.5-8)		
Depth	0.5-1.5 ft			7.5-8 ft			1-1.5 ft			7.5-8 ft			1-1.5 ft			7.5-8 ft		
Date Sampled	10/11/02			10/11/02			10/12/02			10/12/02			10/12/02			10/12/02		
Property ID	70 Property			70 Property			70 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	4.1	1.2		0.51	0.22		1.29	0.50		0.15	0.17	U	0.84	0.40		1.58	0.59	
Bismuth 212	4.6	2.4		0.57	0.60	U	1.5	1.1	U	0.20	0.45	U	1.5	1.0	U	2.3	1.1	U
Bismuth 214	0.52	0.29		0.35	0.14		0.38	0.19		0.196	0.098	U	0.54	0.24		1.29	0.30	
Lead 212	3.68	0.51		0.45	0.12		1.21	0.25		0.238	0.082		0.77	0.20		1.12	0.24	
Lead 214	0.59	0.23		0.41	0.12		0.47	0.23		0.27	0.10		0.73	0.24		1.16	0.27	
Potassium 40	10.2	2.6		6.9	1.4		7.1	1.8		4.9	1.2		10.6	2.1		14.9	2.8	
Protactinium 234M	199	31		-0.9	4.0	U	101	20		1.0	3.4	U	9.3	8.4	U	5.0	7.2	U
Radium 226	0.51	0.20	J	0.37	0.17	J	0.51	0.26	J	0.29	0.13	J	0.48	0.33	J	1.27	0.36	
Radium 228	3.44	0.82		0.31	0.23	U	1.72	0.51		0.35	0.18	U	0.74	0.37	U	1.38	0.57	
Thallium 208	2.76	0.87		0.56	0.24		1.26	0.44		0.23	0.14	U	0.77	0.37		1.19	0.46	
Thorium 232	3.41	0.81		0.43	0.11		1.70	0.51		0.35	0.18		0.79	0.36		1.37	0.57	
Thorium 234	137	18		1.01	0.52		72.7	9.6		0.95	0.54		9.0	1.9		0.42	0.75	U
Uranium 235	6.0	1.6		0.06	0.38	U	4.8	1.5	J	-0.24	0.32	U	0.14	0.61	U	-0.36	0.65	U
Uranium 238	144	17		1.07	0.80		76	10		0.81	0.70	U	9.6	2.3		0.6	1.3	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-064			U-064			U-065B			U-065B			U-066			U-066		
Client Sample Description	U-64 (11.5-12)			U-64 (2.5-3)			U-65B (11.5-12)			U-65B (2.5-3)			U-66 (2-2.5)			U-66 (7.5-8)		
Depth	11.5-12 ft			2.5-3 ft			11.5-12 ft			2.5-3 ft			2-2.5 ft			7.5-8 ft		
Date Sampled	10/13/02			10/13/02			10/13/02			10/13/02			10/13/02			10/13/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.002	0.13	U	0.64	0.31		0.12	0.16	U	3.9	1.2		1.22	0.49		0.29	0.20	U
Bismuth 212	0.005	0.34	U	0.95	0.67	U	0.47	0.40	U	3.5	1.5		0.96	0.84	U	1.13	0.76	U
Bismuth 214	0.087	0.068	U	0.38	0.13		0.165	0.082	U	0.52	0.18		0.73	0.23		0.161	0.099	U
Lead 212	0.064	0.054	U	0.32	0.12		0.121	0.055		3.36	0.47		0.72	0.18		0.25	0.11	
Lead 214	0.078	0.059	U	0.30	0.13		0.095	0.081		0.44	0.16		0.82	0.23		0.27	0.13	
Potassium 40	4.2	1.1		6.8	1.6		3.9	1.3		6.5	1.6		11.3	2.4		8.4	1.9	
Protactinium 234M	-1.5	3.6	U	34	11		3.1	3.3	U	12.2	7.3	U	-4.3	6.7	U	2.0	4.5	U
Radium 226	0.13	0.11	U	0.13	0.17	U	0.17	0.13	J	0.60	0.24	J	0.79	0.30	J	0.08	0.14	U
Radium 228	-0.01	0.16	U	0.48	0.26	U	0.12	0.16	U	2.53	0.61		0.79	0.43		0.26	0.25	U
Thallium 208	0.011	0.092	U	0.42	0.22		0.12	0.11	U	3.32	0.88		0.48	0.31	U	0.16	0.14	U
Thorium 232	-0.005	0.16	U	0.30	0.12	J	0.13	0.16	J	2.50	0.61		0.78	0.42	J	0.25	0.25	J
Thorium 234	-0.19	0.26	U	19.0	3.0		-0.41	0.30	UJ	10.5	1.7		0.11	0.63	U	-0.14	0.40	U
Uranium 235	-0.06	0.27	U	1.25	0.74		0.18	0.28	U	0.47	0.81	U	0.12	0.61	U	-0.39	0.39	U
Uranium 238	-0.69	0.43	UJ	20.8	3.3		-0.34	0.47	U	9.5	2.1		0.3	1.0	U	0.06	0.82	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-067			U-067			U-068			U-068			U-068			U-070		
Client Sample Description	U-67 (2-2.5)			U-67 (7.5-8)			PMC-6			U-68 (2-3)			U-68 (6.5-8)			U-70 (2.5-3)		
Depth	2-2.5 ft			7.5-8 ft			2-3 ft			2-3 ft			6.5-8 ft			2.5-3 ft		
Date Sampled	10/13/02			10/13/02			10/13/02			10/13/02			10/13/02			10/14/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.60	0.46	U	0.40	0.20		0.47	0.39	U	0.68	0.60	U	0.38	0.19		0.53	0.30	
Bismuth 212	0.1	1.6	U	0.66	0.54	U	0.5	1.4	U	1.2	1.3	U	0.08	0.45	U	0.78	0.59	U
Bismuth 214	0.33	0.22	U	0.242	0.092		0.14	0.19	U	0.81	0.29		0.273	0.094		0.20	0.11	U
Lead 212	0.51	0.28		0.239	0.074		0.41	0.19		0.63	0.18		0.233	0.093		0.35	0.11	
Lead 214	0.32	0.25	U	0.276	0.084		0.27	0.21	U	0.47	0.22		0.204	0.090		0.31	0.12	
Potassium 40	5.3	1.5		8.0	1.6		6.6	1.8		5.4	1.5		3.9	1.5		5.7	1.2	
Protactinium 234M	542	72		0.7	4.5	U	275	45		283	43		3.6	4.1	U	34	12	
Radium 226	0.82	0.37	J	0.25	0.11	J	0.36	0.30	J	0.84	0.29	J	0.20	0.12	J	0.39	0.18	J
Radium 228	0.43	0.57	U	0.32	0.22	U	0.62	0.48	U	0.45	0.51	U	0.16	0.19	U	0.34	0.23	U
Thallium 208	0.57	0.44	U	0.21	0.13	U	-0.04	0.30	U	0.47	0.38	U	0.32	0.15		0.32	0.19	
Thorium 232	0.39	0.57	J	0.31	0.22	J	0.60	0.48	J	0.44	0.50	J	0.16	0.19	J	0.34	0.23	
Thorium 234	430	59		2.18	0.66		206	27		231	30		1.75	0.62		33.6	4.5	
Uranium 235	23.7	5.0		-0.41	0.34	UJ	11.4	2.5		12.7	2.8		-0.41	0.34	UJ	1.60	0.83	
Uranium 238	466	50		1.7	1.0		216	26		244	25		0.72	0.74		35.0	4.7	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-070			U-071			U-071			U-072			U-073			U-073		
Client Sample Description	U-70 (7.5-8)			U-71 (1.5-2)			U-71 (7.5-8)			U-72 (2.5-3.5)			U-73 (2-2.5)			U-73 (7.5-8)		
Depth	7.5-8 ft			1.5-2 ft			7.5-8 ft			2.5-3.5 ft			2-2.5 ft			7.5-8 ft		
Date Sampled	10/14/02			10/14/02			10/14/02			10/30/02			10/14/02			10/14/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.80	0.31		1.74	0.63		0.43	0.22		0.97	0.44		0.47	0.34	U	0.23	0.17	U
Bismuth 212	0.75	0.52	U	1.7	1.2	U	0.49	0.48	U	1.02	0.79	U	0.7	1.0	U	0.19	0.50	U
Bismuth 214	0.33	0.12		0.97	0.28		0.202	0.0996		0.47	0.16		0.82	0.26		0.24	0.11	
Lead 212	0.47	0.16		1.14	0.25		0.302	0.093		0.89	0.17		0.60	0.21		0.163	0.078	
Lead 214	0.27	0.11		1.04	0.27		0.34	0.11		0.43	0.14		0.63	0.21		0.220	0.094	
Potassium 40	5.4	1.5		11.4	2.9		4.8	1.4		7.5	1.6		7.3	1.9		7.1	1.4	
Protactinium 234M	18.7	9.4		2.8	6.9	U	2.2	3.9	U	11.0	6.8	U	29	12		2.7	3.6	U
Radium 226	0.38	0.18	J	1.13	0.45		0.21	0.13	J	0.30	0.23	J	0.97	0.36	J	0.1	0.12	U
Radium 228	0.32	0.23	U	0.96	0.48	U	0.41	0.19		0.78	0.36		1.16	0.43		0.26	0.20	U
Thallium 208	0.52	0.20		1.32	0.50		0.15	0.15	U	0.81	0.32		0.68	0.32		0.19	0.14	U
Thorium 232	0.44	0.15		1.08	0.23		0.39	0.19		0.77	0.35		1.15	0.42		0.26	0.20	
Thorium 234	11.1	1.9		0.65	0.81	U	-0.10	0.30	U	11.2	1.7		18.6	3.3		-0.05	0.33	U
Uranium 235	0.19	0.45	U	0.10	0.65	U	-0.51	0.37	UJ	0.06	0.63	U	0.57	0.74	U	0.05	0.35	U
Uranium 238	12.5	2.6		0.8	1.3	U	-0.17	0.42	U	11.7	2.9		21.7	3.7		0.23	0.56	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-074			U-074			U-074B			U-075A			U-075B			U-075B		
Client Sample Description	MSB-1			U-74 (11.5-12)			U-74B(19.5)			U-75 (7.0-7.5)			U-75B (2.5-3)			U-75B (6.5-7)		
Depth	11.5-12 ft			11.5-12 ft			19.5-19.5 ft			7-7.5 ft			2.5-3 ft			6.5-7 ft		
Date Sampled	10/14/02			10/14/02			10/22/02			10/14/02			10/14/02			10/14/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.43	0.23		0.17	0.20	U	0.17	0.17	U	43	11		24.0	6.4		5.0	1.4	
Bismuth 212	0.31	0.55	U	0.32	0.57	U	0.0001	0.79	U	44.3	7.6		25.5	4.5		5.1	1.8	
Bismuth 214	0.14	0.11	U	0.24	0.10	U	0.09	0.12	U	0.25	0.32	U	0.44	0.26	U	0.28	0.14	U
Lead 212	0.125	0.080		0.214	0.085		0.18	0.12		39.2	4.9		19.6	2.5		4.43	0.59	
Lead 214	0.19	0.10		0.17	0.10		0.12	0.11	U	0.30	0.32	U	0.37	0.24	U	0.22	0.18	
Potassium 40	6.5	1.6		6.6	1.5		2.9	1.6		7.5	2.5		9.0	2.3		2.8	1.3	
Protactinium 234M	18	11		21	10		5.1	6.9	U	23	19		42	18		36	12	
Radium 226	-0.11	0.13	U	0.25	0.17	J	-0.07	0.15	U	0.43	0.57	U	0.30	0.47	U	0.21	0.12	U
Radium 228	0.19	0.22	U	0.19	0.25	U	0.27	0.29	U	36.2	4.4		17.6	2.5		3.68	0.74	
Thallium 208	0.20	0.15	U	0.22	0.17	U	0.08	0.17	U	38.8	9.0		20.6	4.8		5.0	1.3	
Thorium 232	0.18	0.22	J	0.19	0.25		0.24	0.29	J	35.8	4.4		17.5	2.5		3.65	0.74	
Thorium 234	15.2	2.4		15.0	2.5		4.3	1.1		67.0	9.5		54.9	7.4		30.1	4.1	
Uranium 235	0.65	0.48		0.67	0.48		0.31	0.52	U	2.4	2.4		1.3	1.9	J	1.35	0.90	
Uranium 238	16.3	2.5		17.5	3.0		4.1	1.6		42.0	7.7		38.4	6.3		28.0	4.6	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-075E			U-076			U-076			U-077			U-077			U-078		
Client Sample Description	U-75E (11.5-12)			U-76(1-2)			U-76(7-8)			U-77(2.5-3)			U-77(7.5-8)			U-78(2.5-3.5)		
Depth	11.5-12 ft			1-2 ft			7-8 ft			2.5-3 ft			7.5-8 ft			2.5-3.5 ft		
Date Sampled	10/14/02			10/16/02			10/16/02			10/16/02			10/16/02			10/17/02		
Property ID	100 Property			70 Property			70 Property			70 Property			70 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.47	0.24		0.84	0.46		0.20	0.17	U	0.71	0.37		0.56	0.30	U	1.75	0.66	
Bismuth 212	0.71	0.65	U	1.20	0.78	U	0.30	0.38	U	0.29	0.75	U	1.22	0.83	U	1.6	1.4	U
Bismuth 214	0.33	0.15		0.57	0.17		0.180	0.081	U	0.33	0.18		0.69	0.18		0.79	0.25	
Lead 212	0.34	0.12		0.71	0.17		0.097	0.073		0.48	0.15		0.66	0.18		1.04	0.25	
Lead 214	0.36	0.14		0.56	0.17		0.092	0.063	U	0.36	0.15		0.70	0.20		0.87	0.25	
Potassium 40	7.4	1.4		10.3	2.2		4.9	1.3		7.8	1.8		7.1	1.6		7.0	1.9	
Protactinium 234M	23	12		5.8	5.6	U	1.7	2.6	U	48	13		3.9	4.9	U	202	37	
Radium 226	0.13	0.17	U	0.63	0.26	J	0.201	0.096	J	0.32	0.26	J	0.91	0.25	J	0.42	0.36	U
Radium 228	0.23	0.24	U	0.92	0.40		0.06	0.13	U	0.63	0.30		0.59	0.30	U	1.50	0.56	
Thallium 208	0.27	0.19	U	0.81	0.31		0.067	0.098	U	0.62	0.28		0.64	0.28		1.55	0.53	
Thorium 232	0.26	0.24		0.91	0.40		0.07	0.13	U	0.46	0.14		0.59	0.30		0.98	0.23	J
Thorium 234	19.2	2.9		3.7	1.0		-0.06	0.28	U	31.4	4.8		0.15	0.54	U	141	20	
Uranium 235	0.99	0.74	J	-0.38	0.52	U	0.05	0.27	U	1.24	0.50		0.04	0.47	U	7.0	2.3	
Uranium 238	19.8	2.9		3.8	2.1		-0.47	0.42	UJ	35.7	5.3		0.67	0.91	U	146	17	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-078			U-079C			U-079C			U-081			U-082			U-082		
Client Sample Description	U-78(7.5-8)			U-79C(3-3.5)			U-79C(7.5-8)			U-81(7.5-8.0)			U-82(1.5-2)			U-82(11.5-12)		
Depth	7.5-8 ft			3-3.5 ft			7.5-8 ft			7.5-8 ft			1.5-2 ft			11.5-12 ft		
Date Sampled	10/17/02			10/17/02			10/17/02			10/18/02			10/18/02			10/18/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.24	0.15	U	1.07	0.54		0.19	0.14	U	0.92	0.42		1.54	0.53		0.13	0.16	U
Bismuth 212	0.20	0.45	U	1.7	1.2	U	0.32	0.45	U	1.49	0.88	U	1.7	1.1	U	0.30	0.43	U
Bismuth 214	0.126	0.093	U	0.76	0.24		0.202	0.084		0.64	0.22		0.37	0.22		0.193	0.086	U
Lead 212	0.190	0.078		0.81	0.24		0.152	0.078		0.72	0.18		1.16	0.27		0.201	0.066	
Lead 214	0.170	0.071		0.77	0.27		0.191	0.099		0.68	0.20		0.45	0.17		0.138	0.092	U
Potassium 40	5.4	1.5		9.1	2.2		6.8	1.3		7.7	1.9		7.4	1.6		6.3	1.3	
Protactinium 234M	1	3.1	U	98	22		6.4	4.8	U	2.9	4.7	U	53	14		3.3	4.0	U
Radium 226	0.134	0.096	U	0.61	0.33	J	0.08	0.10	U	0.47	0.28	J	0.47	0.29	J	0.05	0.10	U
Radium 228	0.20	0.14	U	1.06	0.48		0.21	0.18	U	0.70	0.36	U	1.43	0.44		0.15	0.17	U
Thallium 208	0.18	0.11	U	1.32	0.47		0.12	0.11	U	0.77	0.32		1.04	0.40		0.16	0.12	U
Thorium 232	0.20	0.14	J	0.76	0.23	J	0.21	0.18	J	0.70	0.36		1.42	0.44		0.15	0.17	
Thorium 234	0.08	0.34	U	85	11		-0.12	0.32	U	0.32	0.62	U	38.4	5.2		0.79	0.35	
Uranium 235	0.03	0.27	U	4.6	1.8		-0.002	0.33	U	0.004	0.54	U	1.88	0.65		-0.13	0.30	U
Uranium 238	0.09	0.52	U	101	13		0.56	0.56	U	0.7	1.1	U	43.6	6.1		-0.18	0.55	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-083			U-083			U-084			U-084			U-085			U-085		
Client Sample Description	U-83(11.5-12)			U-83(2.5-3)			U-84(2.5-3)			U-84(7.5-8)			U-85(2.5-3)			U-85(7.5-8)		
Depth	11.5-12 ft			2.5-3 ft			2.5-3 ft			7.5-8 ft			2.5-3 ft			7.5-8 ft		
Date Sampled	10/18/02			10/18/02			10/18/02			10/18/02			10/18/02			10/18/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	-0.01	0.13	U	0.72	0.39		1.58	0.56		0.35	0.20	U	0.83	0.38		0.27	0.19	U
Bismuth 212	0.45	0.54	U	1.28	0.78	U	1.79	0.92	U	0.37	0.57	U	1.6	1.1	U	0.92	0.56	U
Bismuth 214	0.101	0.077	U	0.23	0.16	U	0.40	0.16		0.233	0.092		0.49	0.21		0.30	0.12	
Lead 212	0.074	0.054	U	0.70	0.16		1.26	0.22		0.229	0.094		0.66	0.20		0.34	0.11	
Lead 214	0.157	0.077	U	0.40	0.16		0.30	0.13		0.28	0.10		0.61	0.19		0.176	0.097	U
Potassium 40	6.4	1.6		6.3	1.4		6.9	1.5		7.0	1.5		7.9	1.6		6.3	1.4	
Protactinium 234M	0.06	3.9	U	63	14		31	10		2.1	4.1	U	73	23		0.3	3.6	U
Radium 226	0.08	0.10	U	0.13	0.18	U	0.45	0.26	J	0.18	0.15	U	0.38	0.23	J	0.17	0.13	U
Radium 228	0.14	0.16	U	0.86	0.32		1.02	0.40		0.24	0.18	U	0.71	0.46		0.42	0.21	U
Thallium 208	0.090	0.099	U	0.89	0.32		1.27	0.40		0.14	0.14	U	0.87	0.37		0.32	0.17	U
Thorium 232	0.13	0.16	J	0.85	0.32		1.01	0.39		0.25	0.18		0.70	0.46		0.42	0.21	
Thorium 234	-0.04	0.33	U	46.5	6.5		19.9	2.8		5.3	1.1		64.3	8.9		0.56	0.42	U
Uranium 235	0.20	0.32	U	2.3	1.0		0.75	0.38		0.54	0.41		3.5	1.4		-0.17	0.32	U
Uranium 238	0.39	0.59	U	49.7	6.8		22.0	3.8		5.5	1.6		70.3	9.3		0.74	0.74	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-086B	U-086B	U-087	U-087	U-089	U-089B
Client Sample Description	U-86B (19.5-20)	U-86B (2.5-3)	U-87(2.5-3)	U-87(6.5-8)	U-89 (2-3)	U-89B (2.5-3)
Depth	19.5-20 ft	2.5-3 ft	2.5-3 ft	6.5-8 ft	2-3 ft	2.5-3 ft
Date Sampled	10/19/02	10/19/02	10/18/02	10/18/02	10/19/02	10/19/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property
Units	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g
Actinium 228	0.09 0.12 U	1.26 0.46	1.03 0.54	0.15 0.16 U	0.65 0.32	1.18 0.40
Bismuth 212	0.1 0.40 U	1.31 0.76 U	1.2 1.0 U	0.48 0.35 U	0.78 0.68 U	0.72 0.69 U
Bismuth 214	0.089 0.061 U	0.22 0.14 U	0.42 0.24	0.211 0.092	0.45 0.15	0.23 0.12
Lead 212	0.072 0.040	1.09 0.20	1.04 0.20	0.160 0.065	0.75 0.17	0.68 0.15
Lead 214	0.087 0.073 U	0.29 0.14	0.52 0.17	0.245 0.086	0.42 0.15	0.21 0.14
Potassium 40	2.91 0.84	5.0 1.2	9.2 1.8	5.5 1.3	6.9 1.6	6.9 1.4
Protactinium 234M	4.0 4.1 U	22.3 8.2	133 26	3.0 3.0 U	5.7 5.4 U	12.5 8.9
Radium 226	0.003 0.088 U	-0.008 0.15 U	0.22 0.23 U	0.08 0.11 U	0.37 0.20 J	0.26 0.15 J
Radium 228	0.04 0.12 U	1.04 0.38	0.69 0.47	0.34 0.17 U	0.54 0.30 U	0.60 0.30
Thallium 208	0.047 0.088 U	1.12 0.35	1.17 0.40	0.02 0.10 U	0.74 0.30	0.62 0.26
Thorium 232	0.04 0.12 U	1.03 0.38	0.69 0.46	0.32 0.17	0.70 0.15	0.59 0.30
Thorium 234	3.12 0.77	17.8 2.6	114 15	0.14 0.33 U	8.6 1.8	9.1 1.4
Uranium 235	0.08 0.28 U	0.85 0.35	6.2 1.4	0.13 0.31 U	0.46 0.49 J	0.08 0.45 U
Uranium 238	3.6 1.3	18.5 2.8	122 15	-0.03 0.51 U	9.1 2.4	9.0 1.7

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-089B			U-090			U-091			U-092			U-092			U-093		
Client Sample Description	U-89B (7.5-8)			U-90(1-2)			U-91(2.5-3)			U-92 (19.5-20)			U-92 (2-2.5)			U-93 (1-2.5)		
Depth	7.5-8 ft			1-2 ft			2.5-3 ft			19.5-20 ft			2-2.5 ft			1-2.5 ft		
Date Sampled	10/19/02			10/18/02			10/18/02			10/19/02			10/19/02			10/19/02		
Property ID	100 Property			140 Property			140 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.45	0.27	U	1.12	0.60		2.58	0.86		0.15	0.13	U	1.40	0.49		0.63	0.29	
Bismuth 212	0.83	0.57	U	1.5	1.0	U	3.4	1.5		0.15	0.37	U	2.4	1.0		0.88	0.81	U
Bismuth 214	0.27	0.15	U	1.03	0.26		0.55	0.25		0.108	0.070	U	0.29	0.12		0.45	0.20	
Lead 212	0.50	0.16		1.04	0.22		1.90	0.34		0.099	0.055		1.49	0.24		0.55	0.14	
Lead 214	0.35	0.12		0.86	0.22		0.63	0.22		0.140	0.075		0.29	0.11		0.41	0.16	
Potassium 40	7.9	1.8		9.2	2.6		9.2	2.0		3.6	1.1		6.4	1.5		6.9	1.7	
Protactinium 234M	2.4	4.8	U	5.6	7.4	U	126	28		-1.6	3.6	U	13.5	6.6	U	71	17	
Radium 226	0.27	0.16	J	1.04	0.31		0.42	0.40	J	0.124	0.084	U	0.19	0.18	U	0.36	0.22	J
Radium 228	0.35	0.26	U	0.86	0.40		1.95	0.66		0.17	0.11	U	1.06	0.34		0.42	0.32	U
Thallium 208	0.48	0.20		0.80	0.40		2.05	0.63		0.14	0.10	U	1.64	0.47		0.56	0.27	
Thorium 232	0.35	0.26		0.85	0.39		1.93	0.66		0.17	0.11		1.05	0.34		0.42	0.32	
Thorium 234	0.77	0.70		2.24	0.70		97	13		0.51	0.44	U	12.0	1.8		45.2	6.1	
Uranium 235	0.02	0.39	U	0.42	0.68	U	5.7	2.0		0.05	0.24	U	0.67	0.59		2.43	0.99	
Uranium 238	1.6	1.3		2.2	1.6		103	13		0.32	0.50	U	11.5	2.1		46.8	6.1	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-093			U-094			U-094			U-094			U-095			U-095		
Client Sample Description	U-93 (19-19.5)			U-94(11.5-12)			U-94(2.5-4)			U-94DUP(11.5-12)			U-95 (19-19.5)			U-95 (2.5-3.5)		
Depth	19-19.5 ft			11.5-12 ft			2.5-4 ft			11.5-12 ft			19-19.5 ft			2.5-3.5 ft		
Date Sampled	10/19/02			10/22/02			10/22/02			10/22/02			10/20/02			10/20/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.16	0.14	U	0.24	0.22	U	0.76	0.31		0.31	0.24	U	0.002	0.087	U	1.20	0.49	
Bismuth 212	0.00006	0.36	U	0.29	0.60	U	0.76	0.68	U	0.12	0.51	U	0.13	0.34	U	0.7	1.1	U
Bismuth 214	0.158	0.084	U	0.06	0.11	U	0.49	0.16		0.22	0.12	U	0.077	0.059	U	0.65	0.25	
Lead 212	0.060	0.059	U	0.118	0.089	U	0.44	0.13		0.137	0.079		0.043	0.039	U	0.65	0.20	
Lead 214	0.145	0.079	U	0.077	0.095	U	0.26	0.14		0.158	0.090	U	0.118	0.055	U	0.56	0.21	
Potassium 40	3.41	0.97					6.1	1.3		3.4	2.0		2.3	1.1		9.5	1.9	
Protactinium 234M	0.09	3.8	U	3.6	6.3	U	37	11		-0.8	4.8	U	-2.1	2.8	U	105	22	
Radium 226	0.1	0.10	U	-0.02	0.13	U	0.23	0.18	J	0.11	0.14	U	0.011	0.078	U	0.64	0.33	J
Radium 228	0.11	0.16	U	0.22	0.25	U	0.62	0.30		0.02	0.21	U	0.16	0.14	U	1.06	0.50	
Thallium 208	0.21	0.13	U	0.09	0.14	U	0.37	0.21		0.05	0.14	U	-0.033	0.063	U	0.84	0.34	
Thorium 232	0.13	0.15		0.13	0.26	U	0.61	0.30		0.008	0.21	U	0.16	0.14		1.05	0.49	
Thorium 234	-0.41	0.27	UJ	-0.56	0.35	UJ	19.9	3.2		-0.47	0.37	UJ	0.23	0.28	U	87	11	
Uranium 235	-0.10	0.28	U	-0.19	0.42	U	1.16	0.65	J	-0.32	0.41	U	-0.03	0.25	U	4.4	1.2	J
Uranium 238	-0.25	0.41	U	-0.25	0.51	U	23.6	4.1		-0.20	0.52	U	0.10	0.46	U	91	12	

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-096B			U-096B			U-096B			U-097			U-097			U-098		
Client Sample Description	U-96B			U-96B (1.5-2.5)			U-96B (19-19.5)			U-97(19.5-20)			U-97(2.5-3.5)			U-98 (19.5-20)		
Depth	1.5-2.5 ft			1.5-2.5 ft			19-19.5 ft			19.5-20 ft			2.5-3.5 ft			19.5-20 ft		
Date Sampled	10/20/02			10/20/02			10/20/02			10/22/02			10/22/02			10/21/02		
Property ID	100 Property			100 Property			100 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	1.56	0.54		1.67	0.63		0.18	0.14	U	-0.01	0.11	U	0.86	0.38		0.07	0.14	U
Bismuth 212	1.64	0.84	U	2.18	0.96		0.75	0.38	U	0.35	0.43	U	0.82	0.89	U	0.17	0.35	U
Bismuth 214	0.20	0.13	U	0.18	0.17	U	0.107	0.067	U	0.087	0.081	U	0.64	0.20		0.052	0.068	U
Lead 212	1.32	0.23		1.30	0.24		0.071	0.055	U	0.059	0.064	U	0.73	0.17		0.053	0.057	U
Lead 214	0.31	0.14		0.28	0.14		0.062	0.063	U	0.075	0.071	U	0.69	0.23		0.080	0.064	U
Potassium 40	5.6	1.3		5.8	1.4		4.14	0.97		3.6	1.2		14.2	3.0		2.6	1.1	
Protactinium 234M	23.7	9.6		23	12		2.4	4.0	U	1.6	3.0	U	-6.4	6.5	U	0.9	2.9	U
Radium 226	0.31	0.23	J	0.02	0.18	U	0.162	0.094	J	0.04	0.10	U	0.78	0.27	J	0.078	0.092	U
Radium 228	1.10	0.49		1.44	0.43		0.04	0.14	U	0.11	0.15	U	0.69	0.35		0.06	0.13	U
Thallium 208	1.30	0.41		1.26	0.42		0.029	0.087	U	0.08	0.11	U	0.59	0.30		0.040	0.077	U
Thorium 232	1.09	0.48		1.43	0.43		0.04	0.14	U	0.11	0.14	J	0.68	0.35		0.07	0.12	U
Thorium 234	19.0	2.7		21.4	3.0		0.34	0.39	U	-0.39	0.26	U	2.58	0.88		-0.16	0.27	U
Uranium 235	0.86	0.58	J	0.87	0.41	J	0.04	0.25	U	-0.08	0.24	U	-0.65	0.56	UJ	-0.004	0.26	U
Uranium 238	19.0	2.6		22.8	3.6		-0.02	0.40	U	-0.14	0.44	U	2.6	1.6		-0.44	0.43	UJ

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-098			U-099			U-099			U-100			U-100B			U-100C		
Client Sample Description	U-98 (2.5-3.5)			U-99 (11-11.5)			U-99 (19.5-20)			U-100 (3.5-4)			U-100B (3.5-4)			U-100C (19-19.5)		
Depth	2.5-3.5 ft			11-11.5 ft			19.5-20 ft			3.5-4 ft			3.5-4 ft			19-19.5 ft		
Date Sampled	10/21/02			10/20/02			10/20/02			10/21/02			10/19/02			10/20/02		
Property ID	70 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.32	0.20	U	0.85	0.38		0.07	0.11	U	1.26	0.51		1.79	0.63		0.39	0.23	U
Bismuth 212	0.25	0.46	U	0.86	0.82	U	0.10	0.45	U	2.01	0.94		2.7	1.1		0.24	0.50	U
Bismuth 214	0.20	0.12	U	0.55	0.21		0.094	0.077	U	0.45	0.18		0.66	0.23		0.009	0.077	U
Lead 212	0.283	0.089		0.63	0.19		0.025	0.047	U	1.34	0.24		1.60	0.28		0.38	0.10	
Lead 214	0.30	0.10		0.57	0.19		0.052	0.069	U	0.43	0.16		0.57	0.21		-0.007	0.061	U
Potassium 40	8.1	1.6		8.8	1.8		2.07	0.91		7.2	1.6		6.4	1.8		3.34	0.93	
Protactinium 234M	1.8	4.7	U	74	18		7.2	4.6	U	26.3	9.7		43	13		4.1	3.5	U
Radium 226	0.25	0.13	J	0.50	0.26	J	0.03	0.11	U	0.17	0.19	U	0.48	0.28	J	-0.1	0.10	U
Radium 228	0.26	0.21	U	0.50	0.39	U	0.02	0.14	U	1.25	0.46		1.62	0.57		0.55	0.25	
Thallium 208	0.21	0.15	U	0.82	0.31		0.12	0.11	U	1.41	0.44		1.72	0.52		0.23	0.17	U
Thorium 232	0.25	0.21		0.49	0.39		0.02	0.14	U	1.24	0.45		1.60	0.56		0.54	0.25	
Thorium 234	2.05	0.78		57.4	7.9		3.61	0.92		15.5	2.5		35.9	5.2		1.25	0.46	
Uranium 235	-0.15	0.37	U	2.4	1.0	J	0.31	0.28	U	1.01	0.69	J	1.49	0.93	J	0.28	0.37	U
Uranium 238	2.5	1.3		56.5	7.5		3.7	1.4		16.1	3.1		40.5	6.0		0.82	0.86	U

Notes:
Value/Uncertainty/Qualifer
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-100C			U-101			U-102			U-102			U-103			U-103		
Client Sample Description	U-100C (3-3.5)			U-101 (11-11.5)			U-102 (1.5-3)			U-102 (7.5-8)			U-103 (2-2.5)			U-103 (7.5-8)		
Depth	3-3.5 ft			11-11.5 ft			1.5-3 ft			7.5-8 ft			2-2.5 ft			7.5-8 ft		
Date Sampled	10/20/02			10/19/02			10/19/02			10/19/02			10/19/02			10/19/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.96	0.38		0.09	0.14	U	0.88	0.35		0.54	0.29	U	0.55	0.31	U	1.01	0.42	
Bismuth 212	1.10	0.78	U	0.00008	0.43	U	0.38	0.69	U	0.81	0.65	U	0.80	0.78	U	1.04	0.87	U
Bismuth 214	0.34	0.12		-0.008	0.073	U	0.23	0.17	U	0.66	0.19		0.36	0.17		0.60	0.18	
Lead 212	0.67	0.15		0.020	0.057	U	0.63	0.14		0.52	0.14		0.54	0.15		0.67	0.16	
Lead 214	0.33	0.13		0.128	0.085	U	0.32	0.13		0.41	0.15		0.29	0.14		0.54	0.16	
Potassium 40	5.7	1.4		4.4	1.0		7.1	1.7		8.5	1.9		5.8	1.4		10.3	2.2	
Protactinium 234M	18.2	9.0		0.05	3.9	U	9.2	7.2	U	1.7	4.9	U	54	15		4.1	6.1	U
Radium (226)	0.38	0.21	J	0.01	0.12	U	0.24	0.15	J	0.36	0.21	J	0.20	0.17	U	0.50	0.28	J
Radium 228	0.66	0.28		0.19	0.16	U	0.74	0.34		0.52	0.33	U	0.58	0.29		1.02	0.39	
Thallium 208	0.76	0.28		0.064	0.097	U	0.67	0.27		0.52	0.23		0.63	0.26		0.58	0.31	
Thorium 232	0.65	0.28		0.17	0.16		0.73	0.33		0.52	0.32		0.51	0.14		1.01	0.39	
Thorium 234	12.4	2.0		-0.35	0.28	UJ	8.7	1.5		-0.34	0.51	U	38.3	5.3		0.47	0.55	U
Uranium 235	1.05	0.54		0.13	0.29	U	0.80	0.49		-0.06	0.50	U	2.27	0.84		0.46	0.53	J
Uranium 238	13.7	2.4		-0.53	0.41	UJ	6.9	1.5		-0.48	0.85	U	37.9	4.7		0.06	0.87	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-104			U-105			U-105			U-106			U-106			U-107B		
Client Sample Description	U-104 (1-1.5)			U-105 (1.5-2)			U-105 (1-1.5)			U-106(1.5-2.5)			U-106(19.5-20)			U-107B (19.5-20)		
Depth	1-1.5 ft			1.5-2 ft			1-1.5 ft			1.5-2.5 ft			19.5-20 ft			19.5-20 ft		
Date Sampled	10/19/02			10/21/02			10/21/02			10/22/02			10/22/02			10/20/02		
Property ID	100 Property			70 Property			70 Property			70 Property			70 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	1.20	0.47		0.89	0.54	U	0.81	0.57	U	1.19	0.54		0.11	0.12	U	0.12	0.12	U
Bismuth 212	1.35	0.90	U	1.5	1.1	U	1.1	1.1	U	1.10	0.88	U	0.003	0.26	U	0.1	0.37	U
Bismuth 214	0.26	0.16		0.95	0.26		0.70	0.27		0.60	0.19		0.002	0.061	U	0.131	0.080	U
Lead 212	0.74	0.16		1.21	0.25		0.83	0.23		1.02	0.19		0.062	0.045		0.098	0.058	
Lead 214	0.27	0.13		0.76	0.29		0.78	0.24		0.76	0.19		0.063	0.056	U	0.084	0.075	U
Potassium 40	7.7	1.6		9.8	2.7		9.1	2.0		8.6	2.4		2.17	0.83		3.78	0.95	
Protactinium 234M	50	14		12	10	U	86	21		5.2	7.4	U	1.9	1.9	U	2.7	4.0	U
Radium (226)	0.20	0.18	U	0.97	0.38	J	0.33	0.29	U	0.77	0.25	J	-0.041	0.089	U	0.26	0.10	J
Radium 228	0.82	0.40		1.00	0.48		0.74	0.50	U	0.92	0.43		0.12	0.13	U	0.11	0.14	U
Thallium 208	0.85	0.31		1.26	0.52		0.76	0.45		0.94	0.39		-0.012	0.076	U	0.106	0.088	U
Thorium 232	0.82	0.39		0.99	0.47	J	0.73	0.49	J	0.91	0.42		0.11	0.13	J	0.12	0.14	
Thorium 234	32.4	4.5		12.9	2.3		67.6	9.2		6.3	1.2		-0.03	0.23	U	1.56	0.64	
Uranium 235	1.78	0.55		0.73	0.82	J	4.1	1.6		0.09	0.62	U	-0.16	0.22	U	-0.07	0.30	U
Uranium 238	36.1	5.0		14.0	2.8		74.3	8.6		6.7	1.9		-0.008	0.39	U	2.11	0.97	

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-107B			U-108			U-108			U-109			U-109			U-110		
Client Sample Description	U-107B (3.5-4)			U-108 (1.5-2.5)			U-108 (19.5-20)			U-109(19.5-20)			U-109(2-2.5)			U-110(10-12.5)		
Depth	3.5-4 ft			1.5-2.5 ft			19.5-20 ft			19.5-20 ft			2-2.5 ft			10-12.5 ft		
Date Sampled	10/20/02			10/20/02			10/20/02			10/22/02			10/22/02			10/22/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	1.04	0.43		1.61	0.60		0.05	0.14	U	0.17	0.17	U	1.45	0.61		0.23	0.18	U
Bismuth 212	0.30	0.74	U	2.19	0.98		-0.06	0.44	U	0.23	0.35	U	1.7	1.1	U	1.09	0.56	U
Bismuth 214	0.87	0.23		0.20	0.15	U	0.062	0.073	U	0.154	0.090	U	0.47	0.22	U	0.32	0.11	
Lead 212	0.77	0.20		1.82	0.27		0.019	0.047	U	0.036	0.055	U	1.01	0.24		0.38	0.11	
Lead 214	0.72	0.20		0.27	0.12		0.058	0.071	U	0.143	0.085	U	0.48	0.22		0.37	0.12	
Potassium 40	7.7	1.8		8.1	1.6		3.2	1.0		4.7	1.2		8.0	2.2		5.2	1.3	
Protactinium 234M	6.6	6.9	U	37	11		2.1	4.3	U	1.0	5.1	U	39	17		0.8	4.2	U
Radium (226)	0.75	0.33	J	0.06	0.19	U	-0.016	0.082	U	0.22	0.13	J	0.41	0.32	J	0.37	0.17	J
Radium 228	0.69	0.41		1.79	0.55		-0.006	0.17	U	0.13	0.18	U	0.95	0.52	U	0.51	0.25	
Thallium 208	0.61	0.34		1.98	0.55		0.033	0.088	U	0.06	0.11	U	0.73	0.37		0.25	0.14	U
Thorium 232	0.69	0.41		1.78	0.55		0.01	0.17	U	0.14	0.17	J	0.97	0.52		0.51	0.25	
Thorium 234	15.4	2.5		28.0	3.9		0.53	0.40	U	1.89	0.84		29.5	4.3		-0.03	0.36	U
Uranium 235	7.7	1.9		1.18	0.49	J	0.05	0.28	U	0.31	0.30	J	1.40	0.58	J	-0.1	0.39	U
Uranium 238	11.2	3.2		30.6	4.5		0.79	0.59	U	1.77	0.99		31.4	4.5		-0.46	0.69	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-110			U-111			U-111			U-112			U-112			U-112		
Client Sample Description	U-110(1-1.5)			U-111(1.5-2)			U-111(11.5-12)			U-112 (1.5-2)			U-112 (19.5-20)			U-112 (2-2.5)		
Depth	1-1.5 ft			1.5-2 ft			11.5-12 ft			1.5-2 ft			19.5-20 ft			2-2.5 ft		
Date Sampled	10/22/02			10/22/02			10/22/02			10/21/02			10/21/02			10/21/02		
Property ID	100 Property			100 Property			100 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	2.37	0.90		1.31	0.47		0.62	0.36	U	0.66	0.46	U	0.06	0.15	U	1.33	0.59	
Bismuth 212	2.9	1.6	U	1.14	0.83	U	0.97	0.92	U	0.83	0.82	U	0.26	0.37	U	1.2	1.1	U
Bismuth 214	0.30	0.18	U	0.39	0.16		0.41	0.24		0.57	0.24		0.065	0.075	U	0.84	0.28	
Lead 212	2.20	0.39		1.11	0.21		0.52	0.16		0.64	0.17		0.066	0.050	U	1.22	0.21	
Lead 214	0.29	0.18	U	0.43	0.15		0.48	0.20		0.57	0.21		0.025	0.056	U	0.85	0.23	
Potassium 40	3.4	1.4		7.2	1.6		10.8	2.4		8.1	1.9		3.2	1.0		20.3	3.3	
Protactinium 234M	58	15		25	11		2.6	6.3	U	23	11	U	-0.4	3.8	U	31	14	
Radium (226)	0.06	0.24	U	0.36	0.22	J	0.45	0.29	J	0.38	0.24	J	-0.085	0.086	U	0.97	0.30	J
Radium 228	1.83	0.70		0.94	0.35		0.35	0.33	U	0.76	0.41		0.18	0.15	U	1.37	0.44	
Thallium 208	1.76	0.59		1.08	0.36		0.55	0.27	U	0.56	0.38		0.05	0.11	U	1.18	0.42	
Thorium 232	1.81	0.70		0.93	0.34		0.34	0.32		0.75	0.41	J	0.18	0.15		1.14	0.19	J
Thorium 234	41.5	5.8		27.2	3.8		-0.10	0.55	U	14.9	2.3		-0.13	0.25	U	27.1	3.8	
Uranium 235	1.99	0.77		1.23	0.94	J	-0.34	0.60	U	0.33	0.60	U	0.03	0.26	U	0.70	0.81	
Uranium 238	40.9	5.3		30.2	4.5		0.20	0.72	U	15.4	2.9		-0.45	0.32	UJ	27.5	3.9	

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-113			U-113B			U-114			U-114			U-114			U-114		
Client Sample Description	U-113(19.5-20)			U-113B(1-2)			MSB-210			U-114(1.5-4)			U-114(19-20)			U-114(6-7)		
Depth	19.5-20 ft			1-2 ft			2-4 ft			1.5-4 ft			19-20 ft			6-7 ft		
Date Sampled	10/21/02			10/21/02			10/29/02			10/29/02			10/29/02			10/29/02		
Property ID	70 Property			70 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.14	0.15	U	1.01	0.63		3.0	1.0		2.78	0.94		0.15	0.11	U	6.4	1.8	
Bismuth 212	0.008	0.41	U	2.1	1.2	U	3.6	1.7		2.3	1.6	U	-0.02	0.44	U	7.3	2.1	
Bismuth 214	0.187	0.086	U	0.87	0.30		0.41	0.22		0.54	0.25		-0.024	0.056	U	0.20	0.19	U
Lead 212	0.098	0.057		0.95	0.23		3.07	0.44		2.45	0.40		0.057	0.065	U	5.80	0.77	
Lead 214	0.140	0.072	U	1.0	0.29		0.37	0.19		0.48	0.23		0.002	0.052	U	0.31	0.24	U
Potassium 40	5.4	1.3		10.6	2.2		8.7	1.9		6.7	1.7		2.64	0.78		6.3	1.6	
Protactinium 234M	-0.4	3.9	U	34	16		218	34		190	34		8.8	4.5	U	345	49	
Radium (226)	0.08	0.12	U	0.84	0.25	J	0.42	0.28	J	0.42	0.35	J	0.047	0.084	U	0.16	0.33	U
Radium 228	0.25	0.16	U	1.66	0.69		3.05	0.75		1.75	0.81		0.08	0.13	U	5.6	1.1	
Thallium 208	0.070	0.084	U	0.70	0.43		2.85	0.77		2.64	0.78		0.093	0.092	U	5.5	1.4	
Thorium 232	0.25	0.16		1.65	0.69		3.02	0.74		1.74	0.80		0.09	0.13	U	5.5	1.1	
Thorium 234	-0.14	0.28	U	21.7	3.8		192	25		162	21		4.06	0.94		280	38	
Uranium 235	-0.09	0.28	U	1.02	0.85	J	10.6	2.4		8.1	2.2		-0.006	0.29	U	16.0	3.4	
Uranium 238	-0.70	0.46	UJ	24.8	4.4		211	25		182	22		3.5	1.1		277	30	

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-115			U-115			U-115			U-116			U-116			U-116		
Client Sample Description	U-115(18.5-19.5)			U-115(2-3)			U-115DUP(18.5-19.5)			U-116(1-2.5)			U-116(19-20)			U-116(39.5-40)		
Depth	18.5-19.5 ft			2-3 ft			18.5-19.5 ft			1-2.5 ft			19-20 ft			39.5-40 ft		
Date Sampled	10/23/02			10/23/02			10/23/02			10/30/02			10/30/02			10/30/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.27	0.20	U	1.45	0.68		0.1	0.22	U	0.61	0.40	U	0.06	0.11	U	0.06	0.11	U
Bismuth 212	-0.07	0.56	U	1.5	1.2	U	0.61	0.69	U	1.45	0.88	U	0.34	0.33	U	0.00007	0.40	U
Bismuth 214	0.10	0.10	U	0.76	0.28		0.06	0.11	U	0.54	0.21		0.057	0.061	U	0.142	0.074	U
Lead 212	0.036	0.071	U	1.51	0.28		0.110	0.094		0.78	0.16		0.049	0.051	U	0.080	0.061	
Lead 214	0.063	0.081	U	0.74	0.23		0.18	0.12	U	0.53	0.17		0.052	0.052	U	0.082	0.071	U
Potassium 40	5.0	1.7		8.6	2.4		4.0	1.5		7.0	1.8		2.8	1.0		2.24	0.81	
Protactinium 234M	3.3	6.1	U	126	28		1.4	6.1	U	28	10		-1.1	3.0	U	-0.1	3.2	U
Radium (226)	0.1	0.15	U	0.74	0.32	J	0.07	0.17	U	0.59	0.23	J	0.072	0.087	U	0.15	0.10	J
Radium 228	0.25	0.22	U	1.45	0.55		0.03	0.22	U	0.54	0.38	U	0.05	0.12	U	0.11	0.15	U
Thallium 208	-0.08	0.15	U	1.36	0.49		0.06	0.17	U	1.03	0.33		0.131	0.083	U	0.068	0.089	U
Thorium 232	0.23	0.22		1.43	0.55		0.02	0.22	U	0.53	0.38		0.06	0.12	U	0.1	0.15	U
Thorium 234	-0.56	0.34	UJ	90	12		-0.23	0.41	U	22.8	3.6		-0.53	0.26	UJ	-0.11	0.27	U
Uranium 235	-0.02	0.37	U	5.1	1.4		0.34	0.41	U	1.29	0.48		0.10	0.22	U	0.009	0.25	U
Uranium 238	-0.49	0.55	U	96	12		-0.16	0.54	U	26.0	4.1		-0.09	0.43	U	-0.15	0.47	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-117			U-117			U-118			U-118			U-118			U-119		
Client Sample Description	U-117(1-2.5)			U-117(39.5-40)			U-118(19.5-20)			U-118(38-39)			U-118(7-8)			U-119(1.5-2.5)		
Depth	1-2.5 ft			39.5-40 ft			19.5-20 ft			38-39 ft			7-8 ft			1.5-2.5 ft		
Date Sampled	10/23/02			10/23/02			10/29/02			10/29/02			10/29/02			10/30/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	1.26	0.51		0.17	0.18	U	0.20	0.14	U	0.16	0.15	U	1.07	0.41		1.11	0.44	
Bismuth 212	1.24	0.94	U	0.37	0.42	U	-0.12	0.34	U	-0.1	0.39	U	1.07	0.75	U	0.87	0.72	U
Bismuth 214	0.49	0.19		0.079	0.082	U	0.106	0.069	U	0.069	0.070	U	0.36	0.14		0.54	0.15	
Lead 212	0.93	0.22		0.068	0.058	U	0.065	0.056	U	0.021	0.050	U	0.85	0.19		0.65	0.14	
Lead 214	0.60	0.22		0.033	0.073	U	0.066	0.059	U	0.052	0.069	U	0.24	0.12		0.48	0.14	
Potassium 40	7.4	1.7		1.52	0.72	U	2.47	0.83					4.1	1.2		7.7	1.7	
Protactinium 234M	64	18		2.4	4.1	U	0.3	3.8	U	-1.7	3.0	U	50	13		8.9	6.9	U
Radium (226)	0.50	0.27	J	0.05	0.11	U	0.115	0.089	U	0.008	0.095	U	0.34	0.17	J	0.27	0.16	J
Radium 228	1.05	0.42		0.06	0.17	U	0.14	0.15	U	0.15	0.13	U	1.20	0.44		0.53	0.33	
Thallium 208	0.85	0.35		0.03	0.11	U	0.073	0.099	U	-0.002	0.079	U	0.93	0.34		1.04	0.33	
Thorium 232	1.04	0.41		0.08	0.16	U	0.11	0.15	J	0.13	0.14	J	1.19	0.44		0.53	0.33	
Thorium 234	51.5	7.3		-0.02	0.32	U	0.86	0.47		0.05	0.28	U	35.8	4.9		9.7	1.8	
Uranium 235	2.3	1.2		-0.10	0.32	U	-0.16	0.26	U	0.13	0.24	U	1.61	0.81		-0.19	0.55	U
Uranium 238	59.4	8.1		-0.35	0.49	U	0.80	0.82	J	-0.86	0.49	UJ	37.8	5.2		11.0	2.1	

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-119			U-120			U-120			U-120			U-121			U-121		
Client Sample Description	U-119(17.5-18.5)			U-120 (19.5-20)			U-120 (2-3)			U-120 (39-40)			U-121(1.5-2)			U-121(19.5)		
Depth	17.5-18.5 ft			19.5-20 ft			2-3 ft			39-40 ft			1.5-2 ft			19.5-19.5 ft		
Date Sampled	10/30/02			10/29/02			10/29/02			10/29/02			10/22/02			10/22/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.03	0.13	U	0.16	0.14	U	0.35	0.23	U	0.1	0.12	U	2.13	0.89		0.08	0.17	U
Bismuth 212	0.16	0.39	U	0.17	0.36	U	0.40	0.64	U	0.35	0.28	U	3.0	1.4		-0.17	0.46	U
Bismuth 214	0.048	0.061	U	0.138	0.097	U	0.23	0.12		0.028	0.049	U	0.34	0.21	U	0.045	0.082	U
Lead 212	0.090	0.052	U	0.082	0.056	U	0.31	0.13		0.064	0.042	U	1.90	0.36		0.079	0.076	U
Lead 214	0.01	0.054	U	0.073	0.072	U	0.23	0.11		0.041	0.044	U	0.35	0.17		0.057	0.082	U
Potassium 40	2.91	0.91		4.0	1.1		3.7	1.3		0.94	0.98		6.9	2.2		3.3	1.2	
Protactinium 234M	1.6	3.6	U	2.8	3.9	U	9.8	5.8	U	-0.3	2.4	U	31	14		3.6	4.2	U
Radium (226)	-0.049	0.085	U	0.07	0.12	U	0.35	0.20	J	0.012	0.082	U	0.24	0.26	U	-0.05	0.12	U
Radium 228	0.10	0.16	U	-0.10	0.18	U	0.44	0.23		0.03	0.11	U	1.38	0.48		0.22	0.22	U
Thallium 208	-0.072	0.091	U	-0.051	0.088	U	0.50	0.22		0.113	0.083	U	1.58	0.59		0.03	0.13	U
Thorium 232	0.1	0.16	U	-0.08	0.17	U	0.29	0.12		0.04	0.11	U	1.36	0.48		0.25	0.22	
Thorium 234	0.63	0.36	U	0.70	0.42	U	7.7	1.5		-0.15	0.20	U	19.0	3.2		-0.25	0.37	U
Uranium 235	-0.02	0.26	U	-0.21	0.31	U	0.28	0.47	U	0.1	0.21	U	1.05	0.49	J	0.26	0.36	J
Uranium 238	0.89	0.63		-0.09	0.68	U	8.2	1.8		-0.13	0.38	U	17.5	3.3		-0.25	0.50	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-122			U-122			U-123			U-124			U-124			U-124		
Client Sample Description	U-122(0.5-1.5)			U-122(19-20)			U-123 (11-12)			U-124(19-20)			U-124(3-4)			U-124(39-40)		
Depth	0.5-1.5 ft			19-20 ft			11-12 ft			19-20 ft			3-4 ft			39-40 ft		
Date Sampled	10/28/02			10/28/02			10/29/02			10/30/02			10/30/02			10/30/02		
Property ID	140 Property			140 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.50	0.30	U	0.06	0.12	U	0.18	0.17	U	0.15	0.13	U	0.71	0.32		0.09	0.11	U
Bismuth 212	1.28	0.72	U	0.18	0.33	U	0.54	0.46	U	0.002	0.38	U	0.27	0.74	U	0.23	0.35	U
Bismuth 214	0.45	0.17		0.023	0.055	U	0.052	0.076	U	0.147	0.074	U	0.54	0.15		0.059	0.059	U
Lead 212	0.73	0.17		0.035	0.040	U	0.089	0.057		0.091	0.053		0.62	0.15		0.069	0.048	U
Lead 214	0.42	0.14		0.050	0.045	U	0.087	0.065	U	0.072	0.060	U	0.43	0.19		0.099	0.060	U
Potassium 40	7.8	1.8		2.37	0.85		5.1	1.3		2.92	0.99		10.2	2.1		2.41	0.86	
Protactinium 234M	12.5	7.5		1.6	3.4	U	2.5	5.0	U	0.09	3.5	U	0.1	6.2	U	0.5	3.6	U
Radium (226)	0.47	0.22	J	0.014	0.065	U	0.118	0.097	U	0.011	0.092	U	0.57	0.23	J	0.066	0.089	U
Radium 228	0.45	0.32	U	0.06	0.11	U	0.11	0.17	U	0.17	0.13	U	0.52	0.40	U	0.11	0.13	U
Thallium 208	0.75	0.29		0.076	0.070	U	0.20	0.12	U	0.078	0.079	U	0.68	0.28		0.049	0.080	U
Thorium 232	0.43	0.31		0.06	0.11	U	0.12	0.17	J	0.17	0.13		0.52	0.39		0.12	0.14	J
Thorium 234	7.8	1.7		-0.37	0.21	UJ	2.50	0.72		0.81	0.62		0.58	0.50	U	-0.10	0.23	U
Uranium 235	0.67	0.56		-0.04	0.22	U	0.1	0.29	U	-0.10	0.27	U	0.33	0.50	U	0.17	0.21	U
Uranium 238	9.2	1.9		-0.69	0.38	UJ	2.6	1.1		0.94	0.88		0.01	0.82	U	0.12	0.42	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-125			U-125			U-126			U-126			U-127			U-127		
Client Sample Description	U-125(19-20)			U-125(3-3.5)			U-126 (2.5-3.5)			U-126(11.5-12)			U-127(18.5-19.5)			U-127(2-3)		
Depth	19-20 ft			3-3.5 ft			2.5-3.5 ft			11.5-12 ft			18.5-19.5 ft			2-3 ft		
Date Sampled	10/30/02			10/30/02			10/30/02			10/30/02			10/30/02			10/30/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.06	0.11	U	2.8	1.2		1.56	0.54		0.1	0.14	U	0.03	0.12	U	1.11	0.48	
Bismuth 212	0.08	0.34	U	1.8	1.9	U	0.63	0.96		0.32	0.34	U	0.11	0.50	U	0.65	0.87	U
Bismuth 214	0.065	0.067	U	0.37	0.25	U	0.27	0.19		0.047	0.058	U	0.053	0.070	U	0.64	0.22	
Lead 212	0.039	0.044	U	3.85	0.65		0.88	0.21		0.066	0.057	U	0.058	0.058	U	0.87	0.16	
Lead 214	0.066	0.052	U	0.72	0.27		0.50	0.17		0.076	0.073	U	0.074	0.068	U	0.66	0.19	
Potassium 40	3.14	0.85		10.6	3.1		7.8	2.0		4.6	1.2		2.99	0.95		8.9	2.3	
Protactinium 234M	-3.1	3.2	U	31	19		25.9	9.6		-0.6	3.2	U	0.4	3.9	U	2.4	6.3	U
Radium (226)	0.018	0.079	U	0.45	0.35	U	0.75	0.27	J	0.022	0.099	U	0.03	0.12	U	0.61	0.29	J
Radium 228	0.23	0.14	U	3.4	1.0		0.85	0.38		0.22	0.15	U	-0.10	0.17	U	1.12	0.39	
Thallium 208	0.070	0.078	U	3.4	1.1		1.12	0.39		0.04	0.12	U	0.12	0.10	U	0.87	0.34	
Thorium 232	0.23	0.14		3.40	0.998		0.83	0.37		0.21	0.14		-0.14	0.17	U	1.11	0.39	J
Thorium 234	-0.18	0.25	U	24.4	3.8		17.6	2.6		0.07	0.28	U	-0.78	0.32	UJ	1.5	1.0	
Uranium 235	-0.14	0.23	U	0.3	1.4	U	0.38	0.68	U	-0.04	0.33	U	0.12	0.32	U	-0.001	0.60	U
Uranium 238	-0.16	0.43	U	27.6	5.4		15.9	3.4		-0.95	0.49	UJ	-0.87	0.53	UJ	0.08	1.1	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-128			U-128			U-128			U-129			U-129			U-129		
Client Sample Description	U-128(19.5-20)			U-128(39.5-40)			U-128(6.5-7.5)			U-129 (38.5-39.5)			U-129(18.5-19.5)			U-129(2-2.5)		
Depth	19.5-20 ft			39.5-40 ft			6.5-7.5 ft			38.5-39.5 ft			18.5-19.5 ft			2-2.5 ft		
Date Sampled	10/30/02			10/30/02			10/30/02			10/31/02			10/31/02			10/31/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	-0.006	0.11	U	0.22	0.16	U	1.20	0.47		0.15	0.17	U	0.17	0.14	U	0.45	0.32	U
Bismuth 212	0.10	0.41	U	0.34	0.44	U	1.24	0.91	U	0.44	0.45	U	0.21	0.45	U	0.16	0.83	U
Bismuth 214	0.111	0.077	U	0.080	0.075	U	0.86	0.24		0.083	0.085	U	0.092	0.071	U	0.25	0.15	U
Lead 212	0.044	0.054	U	0.108	0.062		0.89	0.22		0.050	0.053	U	0.092	0.065		0.61	0.15	
Lead 214	0.036	0.067	U	0.125	0.065	U	0.84	0.25		0.087	0.071	U	0.042	0.055	U	0.27	0.18	
Potassium 40	2.24	0.79		2.4	1.1		11.0	2.1		2.24	0.80		3.7	1.0		7.6	1.9	
Protactinium 234M	-0.02	3.1	U	2.5	3.8	U	14.5	9.4	U	-2.3	2.8	U	2.7	3.5	U	15	12	
Radium (226)	0.041	0.093	U	0.051	0.092	U	1.13	0.35		0.06	0.10	U	0.016	0.090	U	0.42	0.23	J
Radium 228	-0.03	0.16	U	0.07	0.16	U	0.74	0.42		0.07	0.13	U	0.12	0.15	U	0.45	0.33	U
Thallium 208	0.031	0.091	U	-0.01	0.11	U	0.71	0.34		0.006	0.083	U	0.14	0.10	U	0.48	0.23	
Thorium 232	-0.04	0.16	U	0.07	0.15	U	0.73	0.41		0.09	0.12	U	0.1	0.16	U	0.45	0.32	J
Thorium 234	0.42	0.36	U	-0.21	0.30	U	11.6	1.8		-0.37	0.28	UJ	3.18	0.81		11.4	2.2	
Uranium 235	0.19	0.25	U	0.12	0.29	U	-0.03	0.74	U	0.03	0.18	U	0.13	0.29	U	1.11	0.44	
Uranium 238	-0.25	0.53	U	-0.42	0.49	U	10.5	2.3		-0.51	0.51	U	3.85	0.98		10.9	2.2	

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-129			U-130			U-130			U-130			U-131			U-131		
Client Sample Description	U-129(6.5-7)			U-130 (1.5-2.5)			U-130 (21.5-22.5)			U-130 (38.5-39.5)			MSB-350			U-131 (0.5-2)		
Depth	6.5-7 ft			1.5-2.5 ft			21.5-22.5 ft			38.5-39.5 ft			0.5-2 ft			0.5-2 ft		
Date Sampled	10/31/02			10/31/02			10/31/02			10/31/02			10/31/02			10/31/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	1.66	0.71		0.96	0.56		0.15	0.14	U	0.15	0.14	U	0.74	0.40		0.94	0.37	
Bismuth 212	2.0	1.2	U	0.8	1.1	U	0.06	0.35	U	0.16	0.36	U	0.90	0.79	U	0.79	0.73	U
Bismuth 214	0.41	0.18		0.85	0.27		0.032	0.052	U	0.081	0.067	U	0.51	0.16		0.48	0.17	
Lead 212	1.36	0.26		1.18	0.26		0.074	0.049		0.072	0.046	U	0.84	0.17		0.64	0.15	
Lead 214	0.28	0.21	U	1.01	0.27		0.070	0.054	U	0.053	0.056	U	0.43	0.15		0.38	0.14	
Potassium 40	8.5	2.0		8.5	2.0		2.07	0.95		3.54	0.93		8.6	1.7		7.9	1.7	
Protactinium 234M	17	10	U	-1.7	9.1	U	0.8	3.2	U	2.1	3.5	U	17.0	7.1		11.6	7.3	U
Radium (226)	0.12	0.23	U	1.10	0.36		0.139	0.082	J	0.054	0.085	U	0.47	0.20	J	0.39	0.17	J
Radium 228	1.34	0.56		1.14	0.51		0.21	0.14	U	0.007	0.10	U	0.48	0.33	U	1.02	0.35	
Thallium 208	1.22	0.45		1.31	0.44		0.052	0.082	U	0.024	0.084	U	0.57	0.26		0.71	0.29	
Thorium 232	1.33	0.56	J	1.12	0.50	J	0.21	0.14	J	0.003	0.099	U	0.47	0.33	J	1.01	0.35	J
Thorium 234	13.3	2.2		8.0	1.9		-0.07	0.25	U	-0.12	0.26	U	10.4	1.9		8.6	1.7	
Uranium 235	0.27	0.83	U	-0.18	0.66	U	0.02	0.28	U	-0.1	0.19	U	0.39	0.53	U	0.23	0.55	U
Uranium 238	12.6	2.5		7.4	2.4		-0.30	0.40	U	-0.36	0.38	U	10.9	2.2		11.4	2.3	

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-131			U-131			U-132			U-132			U-132			U-132		
Client Sample Description	U-131 (18.5-19.5)			U-131 (38.5-39.5)			U-132 (12-13)			U-132 (13-13.5)			U-132 (14.5-16)			U-132 (23-24)		
Depth	18.5-19.5 ft			38.5-39.5 ft			12-13 ft			13-13.5 ft			14.5-16 ft			23-24 ft		
Date Sampled	10/31/02			10/31/02			10/31/02			10/31/02			10/31/02			11/01/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.11	0.13	U	0.13	0.15	U	0.45	0.27	U	0.57	0.55	U	0.11	0.14	U	0.17	0.17	U
Bismuth 212	0.22	0.32	U	0.14	0.36	U	0.60	0.81	U	2.4	2.3	U	0.33	0.39	U	0.28	0.47	U
Bismuth 214	0.071	0.064	U	0.071	0.074	U	0.11	0.12	U	0.03	0.30	U	0.074	0.090	U	0.080	0.076	U
Lead 212	0.097	0.048		0.070	0.051		0.36	0.12		0.32	0.21	U	0.058	0.063	U	0.062	0.063	U
Lead 214	0.113	0.073		0.072	0.067	U	0.005	0.10	U	-0.002	0.26	U	0.147	0.079	U	0.093	0.085	U
Potassium 40	1.8	1.0		3.65	0.99		3.20	0.91					4.1	1.2		3.9	1.3	
Protactinium 234M	0.4	3.1	U	-1.5	2.3	U	152	26		502	80		12.9	5.8	U	14.3	6.9	
Radium (226)	0.073	0.075	U	0.012	0.099	U	0.17	0.18	U	0.03	0.45	U	0.05	0.12	U	-0.0087	0.0998	U
Radium 228	0.09	0.12	U	-0.03	0.16	U	0.25	0.30	U	1.22	0.76		-0.17	0.19	U	0.07	0.16	U
Thallium 208	0.121	0.081	U	0.092	0.089	U	0.27	0.28	U	0.66	0.59	U	-0.021	0.099	U	0.081	0.093	U
Thorium 232	0.09	0.12	J	0.01	0.15	U	0.26	0.30	J	1.24	0.76		-0.18	0.18	U	0.06	0.16	U
Thorium 234	-0.27	0.24	UJ	-0.07	0.29	U	116	15		430	57		8.0	1.6		9.4	1.7	
Uranium 235	-0.13	0.23	U	0.06	0.24	U	6.2	1.7		22.5	4.9		0.34	0.40	U	0.59	0.44	
Uranium 238	-0.41	0.42	U	-0.44	0.45	U	124	15		450	54		7.9	1.7		11.1	2.2	

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-133			U-133			U-133			U-134			U-134			U-134		
Client Sample Description	U-133 (18.5-19.5)			U-133 (2.5-3.5)			U-133 (38.5-39.5)			U-134 (18.5-19.5)			U-134 (2-3)			U-134 (38.5-39.5)		
Depth	18.5-19.5 ft			2.5-3.5 ft			38.5-39.5 ft			18.5-19.5 ft			2-3 ft			38.5-39.5 ft		
Date Sampled	10/31/02			10/31/02			10/31/02			11/01/02			11/01/02			11/01/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.11	0.14	U	1.10	0.50		0.1	0.10	U	0.24	0.16	U	0.98	0.61	U	0.07	0.13	U
Bismuth 212	-0.22	0.43	U	1.1	1.2	U	-0.00003	0.27	U	0.27	0.29	U	1.6	1.3	U	0.26	0.44	U
Bismuth 214	0.035	0.072	U	1.22	0.30		-0.012	0.050	U	-0.023	0.067	U	1.05	0.28		0.048	0.087	U
Lead 212	0.093	0.055		1.15	0.27		-0.040	0.032	UJ	0.021	0.051	U	1.16	0.24		0.082	0.062	U
Lead 214	0.023	0.060	U	1.05	0.26		-0.009	0.040	U	0.079	0.061	U	1.05	0.26		0.075	0.079	U
Potassium 40	1.74	0.97		14.2	2.9					3.78	0.94		11.2	2.7		1.58	0.82	
Protactinium 234M	2.5	3.2	U	11.7	8.6	U	1.8	2.6	U	-1.7	2.6	U	3.4	7.5	U	1.8	3.7	U
Radium (226)	0.048	0.098	U	1.29	0.40		-0.017	0.069	U	0.12	0.10	U	1.07	0.37		0.009	0.10	U
Radium 228	0.01	0.15	U	0.89	0.55	U	0.03	0.11	U	0.11	0.14	U	1.50	0.62		0.08	0.18	U
Thallium 208	0.14	0.11	U	1.30	0.44		-0.030	0.077	U	0.07	0.10	U	1.08	0.39		-0.059	0.092	U
Thorium 232	0.05	0.15	U	0.88	0.54	J	0.03	0.11	U	0.08	0.14	U	1.48	0.61		0.08	0.18	U
Thorium 234	-0.18	0.27	U	5.2	1.4		-0.31	0.32	U	1.14	0.49		1.07	0.77	U	-0.20	0.35	U
Uranium 235	0.06	0.22	U	0.27	0.75	U	-0.33	0.24	UJ	0.25	0.31	J	-0.19	0.67	U	-0.02	0.32	U
Uranium 238	-0.35	0.45	U	5.1	2.4		-1.4	1.0	UJ	0.30	0.58	U	0.7	1.2	U	-0.74	0.55	UJ

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-135			U-135			U-136			U-136			U-137			U-137		
Client Sample Description	U-135 (18.5-19.5)			U-135 (7-8)			U-136 (2-3)			U-136 (7-8)			U-137 (1.5-3)			U-137 (7-8)		
Depth	18.5-19.5 ft			7-8 ft			2-3 ft			7-8 ft			1.5-3 ft			7-8 ft		
Date Sampled	10/31/02			10/31/02			12/09/02			12/09/02			12/09/02			12/09/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	-0.06	0.15	U	0.39	0.31	U	0.58	0.32		0.26	0.17		0.95	0.38		0.40	0.21	
Bismuth 212	0.05	0.54	U	0.23	0.82	U	0.68	0.78		0.43	0.55		1.04	0.84		0.35	0.50	
Bismuth 214	0.102	0.079	U	0.25	0.16	U	0.43	0.15		0.184	0.094		0.21	0.17		0.23	0.12	
Lead 212	0.087	0.067	U	0.20	0.14		0.71	0.17		0.262	0.088		0.70	0.17		0.297	0.091	
Lead 214	0.034	0.070	U	0.15	0.13	U	0.30	0.15		0.22	0.11		0.51	0.16		0.31	0.11	
Potassium 40	3.5	1.0		4.4	1.5		6.6	1.5		6.1	1.4		6.3	1.5		8.1	1.9	
Protactinium 234M	2.9	4.2	U	40	13		38	12		2.4	4.1	U	13.3	7.9	U	2.3	4.0	U
Radium (226)	-0.12	0.13	U	0.36	0.22	J	0.35	0.17	J	0.06	0.11	U	0.49	0.20	J	0.20	0.14	J
Radium 228	0.04	0.17	U	0.46	0.33	U	0.90	0.41		0.50	0.20		0.83	0.36		0.31	0.19	U
Thallium 208	-0.004	0.098	U	0.25	0.21	U	0.81	0.31		0.22	0.14	U	0.71	0.30		0.30	0.16	
Thorium 232	0.04	0.17	U	0.41	0.33	J	0.89	0.40		0.47	0.19		0.82	0.36		0.32	0.19	
Thorium 234	2.43	0.81		23.8	3.9		28.3	3.9		-0.19	0.35	U	13.4	2.3		-0.08	0.35	U
Uranium 235	0.32	0.31		0.90	0.98	J	1.55	0.67		-0.10	0.35	U	0.57	0.30		-0.04	0.36	U
Uranium 238	2.2	1.3		23.3	3.8		28.9	4.4		-0.1	0.58	U	13.2	2.8		0.16	0.56	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-138			U-138			U-139			U-139			U-140			U-140B		
Client Sample Description	U-138 (1.5-2.5)			U-138 (7-8)			U-139 (1.5-2.5)			U-139 (7-8)			U-140 (1-2)			U-140 B (2-3')		
Depth	1.5-2.5 ft			7-8 ft			1.5-2.5 ft			7-8 ft			1-2 ft			2-3 ft		
Date Sampled	12/09/02			12/09/02			12/09/02			12/09/02			12/09/02			12/09/02		
Property ID	100 Property			100 Property			100 Property			100 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.36	0.20		1.01	0.45		0.58	0.30		0.60	0.31		0.59	0.33		1.23	0.50	
Bismuth 212	0.50	0.50		0.73	0.78		0.74	0.69		0.49	0.68		0.82	0.71		2.1	1.1	
Bismuth 214	0.16	0.10		0.41	0.15		0.15	0.13		0.54	0.17		0.38	0.17		0.92	0.27	
Lead 212	0.229	0.080		0.91	0.20		0.63	0.15		0.48	0.12		0.44	0.12		1.16	0.24	
Lead 214	0.257	0.096		0.37	0.15		0.37	0.14		0.62	0.16		0.31	0.14		0.78	0.25	
Potassium 40	6.7	1.5		6.9	1.6		7.7	1.7		9.2	1.9		7.3	1.6		7.1	2.0	
Protactinium 234M	-0.5	4.5	U	29.0	9.5		11.0	6.2	U	1.1	5.5	U	0.9	5.3	U	-2.4	7.5	U
Radium (226)	0.36	0.13	J	0.34	0.20	J	0.32	0.22	J	0.40	0.21	J	0.38	0.23	J	0.81	0.32	J
Radium 228	0.27	0.17	U	0.63	0.35		0.78	0.32		0.72	0.29		0.73	0.25		1.22	0.50	
Thallium 208	0.23	0.12	U	1.01	0.36		0.53	0.26		0.55	0.22		0.30	0.19	U	0.74	0.38	
Thorium 232	0.27	0.17		0.62	0.35		0.77	0.32		0.71	0.29		0.72	0.25		1.20	0.49	
Thorium 234	0.19	0.35	U	25.4	3.9		6.1	1.4		0.34	0.48	U	1.54	0.70		0.22	0.74	U
Uranium 235	0.14	0.33	U	1.44	0.86		0.74	0.51		-0.41	0.43	U	-0.01	0.45	U	-0.52	0.64	U
Uranium 238	0.24	0.56	U	24.0	3.7		7.6	2.0		0.14	0.83	U	1.6	1.4		0.2	1.3	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-140B			U-141			U-141			U-142			U-142			U-143		
Client Sample Description	U-140 B (7.5-8)			U-141 (3-4)			U-141 (7-8)			U-142 (1.5-2.5)			U-142 (3-4)			U-143 (2.5-3)		
Depth	7.5-8 ft			3-4 ft			7-8 ft			1.5-2.5 ft			3-4 ft			2.5-3 ft		
Date Sampled	12/09/02			12/09/02			12/09/02			12/09/02			12/09/02			12/09/02		
Property ID	140 Property			140 Property			140 Property			NCDPW			NCDPW			NCDPW		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.13	0.15		0.25	0.19		0.44	0.22		1.73	0.65		0.22	0.16		0.72	0.28	
Bismuth 212	0.34	0.37		0.92	0.65		0.30	0.53		1.9	1.1		-0.02	0.42		0.74	0.58	
Bismuth 214	0.147	0.077		0.36	0.14		0.35	0.11		1.05	0.29		0.123	0.072		0.27	0.12	
Lead 212	0.236	0.076		0.400	0.096		0.274	0.084		1.27	0.23		0.177	0.068		0.52	0.12	
Lead 214	0.214	0.089		0.26	0.10		0.32	0.10		0.96	0.26		0.25	0.10		0.36	0.12	
Potassium 40	6.2	1.5		6.5	1.6		8.8	1.7		14.4	2.8		6.0	1.2		6.8	1.4	
Protactinium 234M	0.6	3.8	U	13.9	6.4	U	1.1	4.2	U	6.8	8.7	U	-0.04	3.6	U	4.6	4.6	U
Radium (226)	0.14	0.11	U	0.34	0.14	J	0.18	0.13	U	1.20	0.36		0.13	0.12	U	0.43	0.23	J
Radium 228	0.24	0.16	U	0.48	0.24		0.41	0.23	U	1.26	0.46		0.12	0.16	U	0.65	0.28	
Thallium 208	0.25	0.12		0.48	0.21		0.22	0.19	U	1.10	0.47		0.16	0.14	U	0.37	0.20	
Thorium 232	0.25	0.16		0.46	0.24		0.41	0.23		1.24	0.45		0.12	0.16	J	0.64	0.28	
Thorium 234	-0.13	0.29	U	13.3	2.1		-0.05	0.36	U	1.33	0.79	U	-0.15	0.30	U	0.25	0.35	U
Uranium 235	-0.19	0.28	U	0.28	0.44	U	-0.12	0.37	U	-0.14	0.72	U	-0.11	0.29	U	-0.05	0.37	U
Uranium 238	-0.13	0.49	U	12.6	2.3		-0.01	0.66	U	1.2	1.3	U	-0.26	0.52	U	-0.14	0.49	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-143			U-144			U-144			U-145			U-145			U-146		
Client Sample Description	U-143 (3-4)			U-144 (2.5-3)			U-144 (3-4)			U-145 (19-20)			U-145 (2-3.5)			U-146 (1-2)		
Depth	3-4 ft			2.5-3 ft			3-4 ft			19-20 ft			2-3.5 ft			1-2 ft		
Date Sampled	12/09/02			12/09/02			12/09/02			12/10/02			12/10/02			12/10/02		
Property ID	NCDPW			NCDPW			NCDPW			GCDR			GCDR			GCDR		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Actinium 228	0.29	0.17		0.55	0.30		0.55	0.29		0.14	0.14		0.0	0.0		1.27	0.54	
Bismuth 212	0.44	0.50		-0.04	0.71		0.12	0.43		-0.01	0.35		0.0	0.0		0.61	0.97	
Bismuth 214	0.10	0.096		0.59	0.20		0.19	0.10		0.090	0.098		0.0	0.0		0.96	0.28	
Lead 212	0.190	0.079		0.64	0.16		0.257	0.086		0.041	0.054		0.0	0.0		0.82	0.21	
Lead 214	0.170	0.077		0.56	0.18		0.119	0.085	U	0.042	0.065	U	0.0	0.0		0.95	0.27	
Potassium 40	4.6	1.0		7.7	1.8		4.5	1.0		3.34	0.95		6.0	1.4		8.1	2.4	
Protactinium 234M	1.1	4.3	U	6.1	6.3	U	1.5	3.5	U	0.8	3.1	U	0.0	0.0		6.9	6.2	U
Radium (226)	0.14	0.14	U	0.58	0.25	J	0.1	0.11	U	0.046	0.094	U	0.0	0.0	J	1.11	0.40	
Radium 228	0.29	0.20	U	0.45	0.32	U	0.23	0.15	U	0.04	0.15	U	0.0	0.0		0.79	0.40	U
Thallium 208	0.15	0.14	U	0.64	0.26		0.22	0.14	U	0.06	0.10	U	0.0	0.0		1.10	0.44	
Thorium 232	0.30	0.20		0.61	0.15		0.242	0.080		0.04	0.15	U	0.0	0.0	J	0.78	0.20	
Thorium 234	-0.50	0.32	UJ	0.31	0.51	U	-0.17	0.33	U	-0.46	0.24	UJ	0.0	0.0		1.27	0.78	U
Uranium 235	-0.12	0.33	U	-0.10	0.47	U	-0.20	0.29	U	0.08	0.28	U	0.0	0.0		-0.15	0.67	U
Uranium 238	-0.07	0.45	U	-0.40	0.98	U	-0.18	0.54	U	-0.61	0.34	UJ	0.0	0.0		0.8	1.3	U

Notes:
U - not detected
J - estimated value

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Gamma Spectroscopy Data

Location	U-146			U-147			U-147		
Client Sample Description	U-146 (6.5-7.5)			U-147 (1-2)			U-147 (14.5-15.5)		
Depth	6.5-7.5 ft			1-2 ft			14.5-15.5 ft		
Date Sampled	12/10/02			12/10/02			12/10/02		
Property ID	GCDR			GCDR			GCDR		
Units	pCi/g			pCi/g			pCi/g		
Actinium 228	0.13	0.18		0.36	0.24		0.11	0.11	
Bismuth 212	0.31	0.47		0.46	0.51		0.26	0.39	
Bismuth 214	0.228	0.095		0.38	0.15		0.065	0.060	
Lead 212	0.142	0.075		0.36	0.11		0.081	0.048	
Lead 214	0.170	0.085		0.36	0.13		0.084	0.057	U
Potassium 40	10.4	2.2		7.9	1.6		3.95	0.97	
Protactinium 234M	3.5	4.2	U	2.2	3.9	U	2.3	2.7	U
Radium (226)	0.12	0.11	U	0.41	0.20	J	0.051	0.091	U
Radium 228	0.20	0.17	U	0.59	0.30		0.24	0.15	U
Thallium 208	0.076	0.099	U	0.24	0.19	U	0.12	0.11	U
Thorium 232	0.21	0.17		0.58	0.30		0.24	0.15	
Thorium 234	-0.18	0.30	U	0.08	0.41	U	-0.08	0.25	U
Uranium 235	-0.005	0.29	U	0.01	0.35	U	-0.03	0.25	U
Uranium 238	0.37	0.51	U	0.28	0.70	U	0.03	0.43	U

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-005A			U-012			U-012			U-012			U-013			U-017		
Client Sample Description	U-5A (1-15)			MSB-20			U-12(15-16)			U-12(2-3)			U-13(1-2)			U-17(7-8)		
Depth	1-1.5 ft			15-16 ft			15-16 ft			2-3 ft			1.5-2.5 ft			7-8 ft		
Date Sampled	10/10/02			10/16/02			10/16/02			10/16/02			10/16/02			10/18/02		
Property ID	70 Property			70 Property			70 Property			70 Property			70 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	6.1	1.2		0.199	0.054	J	0.151	0.049	J	4.84	0.98		0.95	0.21		0.83	0.32	J
Thorium 230	1.21	0.26		0.214	0.056	J	0.279	0.074	J	1.10	0.24		0.63	0.15	J	1.22	0.40	J
Thorium 232	6.4	1.3		0.202	0.053		0.145	0.046		4.78	0.97		0.89	0.20		0.88	0.32	J
Uranium 234	174	38	J	2.27	0.48	J	1.85	0.39	J	88	19	J	168	38	J	113	21	J
Uranium 235	9.6	2.2	J	0.114	0.049		0.097	0.044	J	5.5	1.2	J	8.0	1.9	J	6.4	1.3	J
Uranium 238	153	33	J	2.13	0.45	J	1.86	0.39	J	83	18	J	167	38	J	115	22	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-019			U-019			U-020			U-032			U-034			U-036		
Client Sample Description	MSB-160			U-19(2-3.5)			U-20(2.5-3.0)			U-32 (2.5-3.0)			U-34 (3-3.5)			U-36 (14-16)		
Depth	2-3.5 ft			2-3.5 ft			2.5-3 ft			2.5-3 ft			3-3.5 ft			14-16 ft		
Date Sampled	10/18/02			10/18/02			10/16/02			10/09/02			10/14/02			10/30/02		
Property ID	100 Property			100 Property			100 Property			140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	9.9	2.1	J	12.7	2.7	J	2.37	0.49		3.59	0.74		0.63	0.15		0.60	0.26	J
Thorium 230	3.05	0.78	J	2.94	0.75	J	0.59	0.14	J	1.52	0.33		0.54	0.13	J	1.09	0.35	J
Thorium 232	9.4	2.0	J	11.7	2.5	J	2.32	0.48		3.47	0.71		0.65	0.15		0.48	0.21	J
Uranium 234	83	16	J	99	19	J	73	15	J	71	15	J	260	50	J	16.5	3.9	J
Uranium 235	5.5	1.2	J	5.3	1.1	J	3.26	0.76	J	3.87	0.88	J	14.1	3.5	J	0.69	0.48	J
Uranium 238	81	15	J	95	18	J	68	14	J	71	15	J	262	50	J	20.1	4.6	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-039			U-042			U-042			U-042			U-044			U-044		
Client Sample Description	U-39 (1.5)			U-42 (1-2)			U-42 (14-18)			U-42 DUP (14-18)			U-44(19-20)			U-44(3-4)		
Depth	1.5-1.5 ft			1-2 ft			14-18 ft			14-18 ft			19-20 ft			3-4 ft		
Date Sampled	10/10/02			10/14/02			10/14/02			10/14/02			10/29/02			10/29/02		
Property ID	140 Property			140 Property			140 Property			140 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	1.38	0.30		24.6	4.9	J	0.36	0.21	J	0.26	0.14	J	0.18	0.23	UJ	1.72	0.56	J
Thorium 230	0.80	0.18	J	4.4	1.0	J	1.08	0.36	J	0.71	0.24	J	0.88	0.36	J	2.25	0.65	J
Thorium 232	1.28	0.27		21.8	4.4	J	0.14	0.12	UJ	0.139	0.092	J	0.25	0.18	J	1.50	0.49	J
Uranium 234	49	10	J	108	22	J	43.6	8.6	J	42.3	8.3	J	2.33	0.71	J	37.4	7.3	J
Uranium 235	2.44	0.57	J	6.3	1.6	J	2.43	0.72	J	2.15	0.64	J	0.16	0.17	J	1.42	0.53	J
Uranium 238	58	12	J	112	22	J	46.4	9.2	J	43.4	8.5	J	1.79	0.59	J	35.8	7.0	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-046			U-048A			U-048A			U-049			U-049			U-053		
Client Sample Description	U-46(2.5-3)			U-48A (1.5-2.5)			U-48A (6-12)			U-49(19.0-20.0)			U-49(2.0-3.0)			U-53(19.5-20)		
Depth	2.5-3 ft			1.5-2.5 ft			0.5-1 ft			19-20 ft			2-3 ft			19.5-20 ft		
Date Sampled	10/15/02			10/10/02			10/10/02			10/28/02			10/28/02			10/28/02		
Property ID	140 Property			70 Property			70 Property			140 Property			140 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	5.0	1.0		0.68	0.16		0.75	0.17		0.14	0.16	UJ	0.90	0.38	J	0.24	0.22	UJ
Thorium 230	1.73	0.36		8.6	1.7		16.0	3.1		1.27	0.44	J	2.88	0.79	J	1.03	0.37	J
Thorium 232	4.89	0.99		0.65	0.15		0.71	0.16		0.08	0.11	UJ	0.59	0.28	J	0.12	0.12	UJ
Uranium 234	710	130	J	12.8	2.6		14.6	2.9		0.45	0.25	J	1.31	0.51	J	0.26	0.20	J
Uranium 235	34.0	7.8	J	0.67	0.17		0.75	0.18		0.01	0.12	UJ	0.14	0.17	J	0.027	0.099	UJ
Uranium 238	720	140	J	10.8	2.2		14.2	2.8		0.27	0.20	J	0.81	0.38	J	0.28	0.22	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-053			U-056			U-056			U-056			U-059			U-059		
Client Sample Description	U-53(2.5-3.5)			MSB-150(5.5-6.0)			U-56(10.5-11.5)			U-56(5.5-6.0)			U-59 (1.5-2.5)			U-59 (6-1.5)		
Depth	2.5-3.5 ft			5.5-6 ft			10.5-11.5 ft			5.5-6 ft			1.5-2.5 ft			0.5-1.5 ft		
Date Sampled	10/28/02			10/17/02			10/17/02			10/17/02			10/11/02			10/11/02		
Property ID	140 Property			70 Property			70 Property			70 Property			70 Property			70 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	0.66	0.30	J	0.29	0.15		0.17	0.16	UJ	0.42	0.25	J	5.9	1.1		8.0	1.6	
Thorium 230	1.36	0.45	J	0.39	0.17	J	0.43	0.23	J	0.57	0.27	J	1.26	0.26		1.40	0.29	
Thorium 232	1.00	0.36	J	0.24	0.12		0.31	0.19	J	0.16	0.14	J	6.0	1.2		7.9	1.6	
Uranium 234	0.83	0.43	J	0.56	0.13		0.30	0.11	J	0.48	0.15	J	63	12		212	45	J
Uranium 235	0.08	0.15	UJ	0.027	0.024	U	0.0000008	0.027	UJ	0.073	0.054	J	2.60	0.54		10	2.2	J
Uranium 238	0.58	0.33	J	0.59	0.14		0.35	0.13	J	0.43	0.14	J	18.8	3.7		163	35	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-061			U-067			U-067			U-075A			U-076			U-082		
Client Sample Description	U-61 (6-1.5)			U-67 (2-2.5)			U-67 (7.5-8)			U-75 (7.0-7.5)			U-76(1-2.0)			U-82(1.5-2.0)		
Depth	0.5-1.5 ft			2-2.5 ft			7.5-8 ft			7-7.5 ft			1-2 ft			1.5-2 ft		
Date Sampled	10/11/02			10/13/02			10/13/02			10/14/02			10/16/02			10/18/02		
Property ID	70 Property			100 Property			100 Property			100 Property			70 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	5.08	0.997		0.95	0.20		0.50	0.12	J	52.3	9.9		0.90	0.20		2.49	0.73	J
Thorium 230	1.09	0.23		0.92	0.20	J	0.398	0.096	J	6.5	1.3		0.62	0.15	J	1.95	0.61	J
Thorium 232	4.94	0.97		0.94	0.20		0.48	0.11		50.0	9.4		0.80	0.18		1.38	0.48	J
Uranium 234	257	52	J	650	120	J	4.73	0.94		77	16	J	4.26	0.89		54	10	J
Uranium 235	13.4	3.0	J	31.0	7.2	J	0.244	0.074		4.29	0.92	J	0.202	0.074		2.87	0.63	J
Uranium 238	254	51	J	630	120	J	4.64	0.92		75	15	J	4.16	0.87		52.5	9.8	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-083			U-084			U-087			U-087			U-089			U-090		
Client Sample Description	U-83(2.5-3.0)			U-84(2.5-3.0)			U-87(2.5-3.0)			U-87(6.5-8.0)			U-89 (2-3)			U-90(1-2)		
Depth	2.5-3 ft			2.5-3 ft			2.5-3 ft			6.5-8 ft			2-3 ft			1-2 ft		
Date Sampled	10/18/02			10/18/02			10/18/02			10/18/02			10/19/02			10/18/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			140 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	1.72	0.55	J	2.42	0.48		2.27	0.64	J	0.31	0.20	J	1.37	0.35	J	2.02	0.59	J
Thorium 230	1.28	0.44	J	0.96	0.20	J	1.26	0.42	J	1.29	0.42	J	1.27	0.33	J	1.73	0.51	J
Thorium 232	1.64	0.52	J	2.58	0.51		1.58	0.49	J	0.33	0.18	J	0.95	0.27	J	1.26	0.41	J
Uranium 234	92	17	J	33.9	7.3		229	44	J	0.88	0.23	J	16.1	3.0	J	3.47	0.73	J
Uranium 235	4.8	1.0	J	2.24	0.68		11.5	2.4	J	0.054	0.058	UJ	0.70	0.20	J	0.20	0.11	J
Uranium 238	90	17	J	33.8	7.2		230	44	J	0.78	0.21	J	15.3	2.9	J	3.40	0.71	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-091			U-092			U-093			U-094			U-094			U-095		
Client Sample Description	U-91(2.5-3)			U-92 (2-2.5)			U-93 (1-2.5)			U-94(11.5-12)			U-94DUP(11.5-12)			U-95 (2.5-3.5)		
Depth	2.5-3 ft			2-2.5 ft			1-2.5 ft			11.5-12 ft			11.5-12 ft			2.5-3.5 ft		
Date Sampled	10/18/02			10/19/02			10/19/02			10/22/02			10/22/02			10/20/02		
Property ID	140 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	2.23	0.44		2.57	0.51		0.99	0.29	J	0.42	0.25	J	0.41	0.25	J	1.40	0.43	J
Thorium 230	0.93	0.20	J	0.72	0.16	J	1.19	0.32	J	0.64	0.29	J	0.87	0.35	J	1.27	0.39	J
Thorium 232	1.94	0.39		2.67	0.52		0.90	0.26	J	0.27	0.18	J	0.26	0.18	J	1.22	0.38	J
Uranium 234	117	27	J	18.2	3.9		76	14	J	0.33	0.18	J	0.35	0.17	J	123	24	J
Uranium 235	6.1	1.8	J	0.80	0.33		4.08	0.88	J	-0.010	0.020	UJ	0.082	0.094	UJ	5.6	1.4	J
Uranium 238	119	27	J	17.0	3.7		75	14	J	0.26	0.16	J	0.21	0.13	J	124	24	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-096B			U-096B			U-097			U-099			U-100C			U-102		
Client Sample Description	U-96B			U-96B (1.5-2.5)			U-97(2.5-3.5)			U-99 (11-11.5)			U-100C (3-3.5)			U-102 (1.5-3)		
Depth	1.5-2.5 ft			1.5-2.5 ft			2.5-3.5 ft			11-11.5 ft			3-3.5 ft			1.5-3 ft		
Date Sampled	10/20/02			10/20/02			10/22/02			10/20/02			10/20/02			10/19/02		
Property ID	100 Property			100 Property			70 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	2.08	0.53	J	2.83	0.65	J	1.34	0.31	J	1.50	0.42	J	1.86	0.37		1.06	0.34	J
Thorium 230	1.22	0.35	J	1.88	0.46	J	1.45	0.32	J	1.59	0.43	J	0.84	0.18	J	0.96	0.31	J
Thorium 232	2.20	0.55	J	2.38	0.56	J	1.10	0.26	J	1.00	0.31	J	1.60	0.32		1.24	0.37	J
Uranium 234	28.8	5.7	J	33.8	6.3	J	3.30	0.86	J	93	18	J	29.0	6.1		13.4	2.6	J
Uranium 235	1.79	0.54	J	1.83	0.42	J	0.31	0.21	J	5.0	1.0	J	1.04	0.38		0.86	0.25	J
Uranium 238	26.7	5.3	J	31.0	5.8	J	4.3	1.1	J	94	18	J	28.2	5.9		12.4	2.4	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-105			U-105			U-107B			U-109			U-110			U-110		
Client Sample Description	U-105 (1.5-2)			U-105 (1-1.5)			U-107B (3.5-4)			U-109(2-2.5)			U-110(10-12.5)			U-110(1-1.5)		
Depth	1.5-2 ft			1-1.5 ft			3.5-4 ft			2-2.5 ft			10-12.5 ft			1-1.5 ft		
Date Sampled	10/21/02			10/21/02			10/20/02			10/22/02			10/22/02			10/22/02		
Property ID	70 Property			70 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	1.61	0.46	J	1.17	0.38	J	1.10	0.24		1.19	0.46	J	0.70	0.18	J	4.22	0.83	J
Thorium 230	1.46	0.42	J	1.78	0.50	J	1.15	0.24	J	1.38	0.49	J	1.18	0.26	J	1.49	0.32	J
Thorium 232	1.16	0.36	J	0.97	0.33	J	1.21	0.25		1.19	0.45	J	0.54	0.14	J	3.89	0.77	J
Uranium 234	11.4	2.3	J	72	14	J	301	56		40.0	8.0	J	0.45	0.22	J	76	15	J
Uranium 235	0.72	0.29	J	5.4	1.3	J	11.5	2.2		1.57	0.57	J	0.005	0.061	UJ	3.76	0.99	J
Uranium 238	11.7	2.4	J	75	15	J	22.4	4.2		37.2	7.5	J	0.65	0.27	J	77	15	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-112			U-112			U-113B			U-114			U-114			U-114		
Client Sample Description	U-112 (1.5-2)			U-112 (2-2.5)			U-113B(1-2)			MSB-210			U-114(1.5-4)			U-114(19-20)		
Depth	1.5-2 ft			2-2.5 ft			1-2 ft			2-4 ft			1.5-4 ft			19-20 ft		
Date Sampled	10/21/02			10/21/02			10/21/02			10/29/02			10/29/02			10/29/02		
Property ID	70 Property			70 Property			70 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	1.17	0.37	J	1.85	0.48	J	1.24	0.30	J	4.2	1.1	J	4.5	1.1	J	0.16	0.21	UJ
Thorium 230	1.28	0.37	J	1.84	0.47	J	1.82	0.40	J	3.13	0.84	J	2.80	0.72	J	2.73	0.80	J
Thorium 232	1.05	0.32	J	1.41	0.39	J	1.05	0.25	J	3.88	0.99	J	4.5	1.1	J	0.20	0.18	UJ
Uranium 234	8.2	1.7	J	26.6	5.0	J	21.3	4.4	J	254	50	J	241	47	J	7.6	1.7	J
Uranium 235	0.84	0.32	J	1.44	0.36	J	1.15	0.44	J	14.1	3.2	J	15.2	3.4	J	0.31	0.23	J
Uranium 238	18.0	3.6	J	31.4	5.9	J	26.6	5.5	J	251	49	J	243	47	J	6.8	1.5	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-114			U-115			U-115			U-115			U-117			U-117		
Client Sample Description	U-114(6-7)			U-115(18.5-19.5)			U-115(2-3)			U-115DUP(18.5-19.5)			U-117(1-2.5)			U-117(39.5-40)		
Depth	6-7 ft			18.5-19.5 ft			2-3 ft			18.5-19.5 ft			1-2.5 ft			39.5-40 ft		
Date Sampled	10/29/02			10/23/02			10/23/02			10/23/02			10/23/02			10/23/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	12.6	2.8	J	0.38	0.11	J	1.96	0.42	J	0.39	0.13	J	1.91	0.41	J	0.66	0.26	J
Thorium 230	6.6	1.6	J	0.80	0.19	J	1.35	0.30	J	0.82	0.20	J	1.36	0.30	J	0.53	0.22	J
Thorium 232	11.6	2.6	J	0.129	0.053	J	1.91	0.40	J	0.154	0.065	J	1.76	0.38	J	0.38	0.18	J
Uranium 234	520	100	J	0.28	0.17	J	117	23	J	0.25	0.16	J	101	20	J	1.02	0.34	J
Uranium 235	25.3	5.8	J	0.08	0.10	UJ	6.3	1.6	J	0.022	0.077	UJ	5.3	1.3	J	0.049	0.069	UJ
Uranium 238	540	110	J	0.30	0.18	J	121	24	J	0.32	0.20	J	102	20	J	0.80	0.29	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-131			U-131			U-132			U-132			U-132			U-132		
Client Sample Description	MSB-350			U-131 (0.5-2)			U-132 (12-13)			U-132 (13-13.5)			U-132 (14.5-16)			U-132 (23-24)		
Depth	0.5-2 ft			0.5-2 ft			12-13 ft			13-13.5 ft			14.5-16 ft			23-24 ft		
Date Sampled	10/31/02			10/31/02			10/31/02			10/31/02			10/31/02			11/01/02		
Property ID	100 Property			100 Property			100 Property			100 Property			100 Property			100 Property		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	1.13	0.38	J	1.25	0.42	J	0.97	0.34	J	0.65	0.27	J	0.24	0.18	UJ	0.33	0.17	J
Thorium 230	2.14	0.58	J	1.72	0.48	J	2.80	0.70	J	2.44	0.60	J	1.36	0.40	J	0.70	0.24	J
Thorium 232	1.19	0.38	J	1.19	0.37	J	1.34	0.41	J	0.92	0.29	J	0.054	0.084	UJ	0.31	0.15	J
Uranium 234	12.0	2.9	J	15.8	3.7	J	248	52	J	630	140	J	19.9	4.4	J	17.0	3.8	J
Uranium 235	0.51	0.42	J	0.53	0.43	J	11.0	3.1	J	39.3	9.97	J	0.72	0.47	J	0.98	0.52	J
Uranium 238	13.8	3.3	J	15.2	3.6	J	258	54	J	680	150	J	17.8	4.0	J	16.4	3.6	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-133			U-136			U-140B			U-140B			U-142			U-142		
Client Sample Description	U-133 (2.5-3.5)			U-136 (2-3)			U-140 B (2-3')			U-140 B (7.5-8)			U-142 (1.5-2.5)			U-142 (3-4)		
Depth	2.5-3.5 ft			2-3 ft			2-3 ft			7.5-8 ft			1.5-2.5 ft			3-4 ft		
Date Sampled	10/31/02			12/09/02			12/09/02			12/09/02			12/09/02			12/09/02		
Property ID	100 Property			100 Property			140 Property			140 Property			NCDPW			NCDPW		
Units	pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Thorium 228	1.65	0.47	J	1.56	0.67	J	1.43	0.70	J	0.56	0.42	UJ	1.10	0.64	J	0.77	0.47	J
Thorium 230	1.68	0.46	J	1.19	0.55	J	1.53	0.68	J	0.81	0.44	J	2.54	0.94	J	1.22	0.56	J
Thorium 232	1.41	0.40	J	1.0	0.49	J	1.41	0.65	J	0.30	0.26	J	1.46	0.66	J	0.60	0.37	J
Uranium 234	8.2	2.1	J	36.6	6.9	J	0.81	0.26	J	0.23	0.15	J	1.00	0.29	J	0.43	0.17	J
Uranium 235	0.59	0.43	J	2.22	0.56	J	0.12	0.11	UJ	0.069	0.084	UJ	0.17	0.11	J	0.014	0.063	UJ
Uranium 238	6.7	1.8	J	36.8	7.0	J	0.93	0.27	J	0.30	0.13	J	0.98	0.28	J	0.32	0.14	J

Notes:
U - not detected
J - estimated value

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Alpha Spectroscopy Data

Location	U-145			U-145		
Client Sample Description	U-145 (19-20)			U-145 (2-3.5)		
Depth	19-20 ft			2-3.5 ft		
Date Sampled	12/10/02			12/10/02		
Property ID	GCDR			GCDR		
Units	pCi/g			pCi/g		
Thorium 228	0.29	0.28	J	1.13	0.57	J
Thorium 230	1.27	0.61	J	1.16	0.55	J
Thorium 232	0.10	0.17	UJ	0.84	0.46	J
Uranium 234	0.27	0.14	J	0.54	0.20	J
Uranium 235	0.014	0.048	UJ	-0.047	0.071	UJ
Uranium 238	0.24	0.12	J	0.45	0.18	J

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-001	U-001	U-002	U-003	U-004	U-005B	U-006	U-007	U-008
Client Sample Description	PC-1	U-1 (4)	U-2 (32-34)	U-3 (4)	U-4 (7.5)	U-5B (8)	U-6 (15)	U-7 (2-2.5)	U-8(15.5-16)
Depth	4-4 ft	4-4 ft	32-34 ft	4-4 ft	7.5-7.5 ft	8-8 ft	15-15 ft	2-2.5 ft	15.5-16 ft
Date Sampled	10/10/02	10/10/02	10/09/02	10/10/02	10/10/02	10/10/02	10/10/02	10/11/02	10/12/02
Property ID	70 Property	70 Property	70 Property	70 Property	70 Property	70 Property	70 Property	70 Property	70 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
1,1-Dichloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
1,1-Dichloroethene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
1,2-Dichlorobenzene	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.2 U	5.1 U	6.3 U	5.4 U
1,2-Dichloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
1,2-Dichloropropane	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
1,3-Dichlorobenzene	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.2 U	5.1 U	6.3 U	5.4 U
1,4-Dichlorobenzene	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.2 U	5.1 U	6.3 U	5.4 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	13 U	11 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	13 U	11 UJ
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	13 UJ	11 UJ
Acetone	10 UJ	4.8 J	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	13 UJ	11 UJ
Benzene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Bromodichloromethane	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Bromoform	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Bromomethane	5.2 UJ	5.2 UJ	5.2 UJ	5.1 UJ	5.1 UJ	5.2 UJ	5.1 UJ	6.3 UJ	5.4 UJ
Carbon disulfide	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Carbon tetrachloride	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Chlorobenzene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Chloroethane	5.2 UJ	5.2 UJ	5.2 UJ	5.1 UJ	5.1 UJ	5.2 UJ	5.1 UJ	6.3 UJ	5.4 UJ
Chloroform	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Chloromethane	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.2 U	5.1 U	6.3 U	5.4 U
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Ethylbenzene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Methylene chloride	10 UJ	9.6 UJ	9.7 UJ	9.3 UJ	9.5 UJ	9.9 UJ	9.5 UJ	13 UJ	12 UJ
Styrene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Tetrachloroethene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	14	2.7 U
Toluene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	0.56 J	0.29 J
trans-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Trichloroethene	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U
Vinyl chloride	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.2 U	5.1 U	6.3 U	5.4 U
Xylenes (total)	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U	2.6 U	3.1 U	2.7 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-008	U-009	U-011	U-012	U-013	U-014	U-015	U-016A	U-017
Client Sample Description	U-8 (4)	U-9 (16)	U-11 (4)	U-12(7.5-8)	U-13(8.5-9)	U-14(2-2.5)	U-15 (38-40)	U-16A(15.5-18.8)	U-17(19-19.5)
Depth	4-4 ft	16-16 ft	4-4 ft	7.5-8 ft	8.5-9 ft	2-2.5 ft	38-40 ft	15.5-18.8 ft	19-19.5 ft
Date Sampled	10/12/02	10/11/02	10/11/02	10/16/02	10/16/02	10/16/02	10/08/02	10/08/02	10/18/02
Property ID	70 Property	70 Property	70 Property	70 Property	70 Property	70 Property	100 Property	100 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
1,1,2,2-Tetrachloroethane	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
1,1,2-Trichloroethane	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethane	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
1,2-Dichlorobenzene	5.1 U	5.1 U	5.0 U	5.1 U	5.3 U	5.1 U	5.2 U	5.2 U	5.1 U
1,2-Dichloroethane	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
1,2-Dichloropropane	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
1,3-Dichlorobenzene	5.1 U	5.1 U	5.0 U	5.1 U	5.3 U	5.1 U	5.2 U	5.2 U	5.1 U
1,4-Dichlorobenzene	5.1 U	5.1 U	5.0 U	5.1 U	5.3 U	5.1 U	5.2 U	5.2 U	5.1 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	11 U	10 U	10 U	10 U	10 U
2-Hexanone	10 UJ	10 U	10 U	10 U	11 U	10 U	10 UJ	10 UJ	10 U
4-Methyl-2-pentanone	10 UJ	10 UJ	10 UJ	10 U	11 U	10 U	10 UJ	10 UJ	10 U
Acetone	10 UJ	10 UJ	10 UJ	10 UJ	11 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Benzene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Bromodichloromethane	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Bromoform	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Bromomethane	5.1 UJ	5.1 UJ	5.0 UJ	5.1 UJ	5.3 UJ	5.1 UJ	5.2 UJ	5.2 UJ	5.1 UJ
Carbon disulfide	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Carbon tetrachloride	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Chlorobenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Chloroethane	5.1 UJ	5.1 UJ	5.0 UJ	5.1 UJ	5.3 UJ	5.1 UJ	5.2 UJ	5.2 U	5.1 UJ
Chloroform	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Chloromethane	5.1 U	5.1 U	5.0 U	5.1 U	5.3 U	5.1 U	5.2 U	5.2 U	5.1 U
cis-1,2-Dichloroethene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
cis-1,3-Dichloropropene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Dibromochloromethane	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Ethylbenzene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Methylene chloride	11 UJ	9.6 UJ	9.4 U	5.1 UJ	5.3 UJ	5.1 UJ	5.4 UJ	5.5 UJ	5.1 UJ
Styrene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Tetrachloroethene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Toluene	0.27 J	0.42 J	0.44 J	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
trans-1,2-Dichloroethene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
trans-1,3-Dichloropropene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Trichloroethene	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U
Vinyl chloride	5.1 U	5.1 U	5.0 U	5.1 U	5.3 U	5.1 U	5.2 U	5.2 U	5.1 U
Xylenes (total)	2.5 U	2.5 U	2.5 U	2.5 U	2.7 U	2.5 U	2.6 U	2.6 U	2.6 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-018	U-019	U-020	U-021	U-022	U-023	U-023	U-024
Client Sample Description	U-18(19-19.5)	U-19(18.5-19)	U-20(19.5-19.8)	U-21(16-16.5)	U-22 (7.5)	U-23 (11)	U-23 (2.5)	U-24 (11.5-12)
Depth	19-19.5 ft	18.5-19 ft	19.5-19.8 ft	16-16.5 ft	7.5-7.5 ft	11-11 ft	2.5-2.5 ft	11.5-12 ft
Date Sampled	10/17/02	10/18/02	10/08/02	10/19/02	10/08/02	10/12/02	10/12/02	10/13/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 UJ	2.6 UJ	2.7 UJ
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
1,1-Dichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
1,1-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
1,2-Dichlorobenzene	5.1 U	5.1 U	5.3 U	5.2 U	5.1 U	5.5 U	5.2 U	5.4 U
1,2-Dichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
1,2-Dichloropropane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
1,3-Dichlorobenzene	5.1 U	5.1 U	5.3 U	5.2 U	5.1 U	5.5 U	5.2 U	5.4 U
1,4-Dichlorobenzene	5.1 U	5.1 U	5.3 U	5.2 U	5.1 U	5.5 U	5.2 U	5.4 U
2-Butanone (MEK)	10 U	10 U	11 U	10 U	10 U	11 UJ	10 UJ	11 U
2-Hexanone	10 U	10 U	11 UJ	10 U	10 UJ	11 UJ	10 UJ	11 UJ
4-Methyl-2-pentanone	10 U	10 U	11 UJ	10 U	10 UJ	11 UJ	10 UJ	11 UJ
Acetone	10 UJ	10 UJ	11 UJ	10 U	10 UJ	11 UJ	10 UJ	11 UJ
Benzene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.0 J	2.7 U
Bromodichloromethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
Bromoform	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 UJ
Bromomethane	5.1 UJ	5.1 UJ	5.3 UJ	5.2 U	5.1 UJ	5.5 UJ	5.2 UJ	5.4 UJ
Carbon disulfide	2.6 U	2.6 U	2.6 U	2.6 UJ	2.6 U	2.7 U	2.6 U	2.7 U
Carbon tetrachloride	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
Chlorobenzene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
Chloroethane	5.1 UJ	5.1 UJ	5.3 UJ	5.2 UJ	5.1 UJ	5.5 UJ	5.2 UJ	5.4 UJ
Chloroform	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
Chloromethane	5.1 U	5.1 UJ	5.3 U	5.2 UJ	5.1 U	5.5 U	5.2 U	5.4 U
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
Ethylbenzene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
Methylene chloride	5.1 UJ	5.1 UJ	5.4 UJ	5.2 UJ	5.2 UJ	7.1 UJ	8.7 UJ	6.4 UJ
Styrene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
Tetrachloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	1.4 J	41	2.7 U
Toluene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	0.48 J	1.0 J	0.30 J
trans-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U
Trichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	0.80 J	2.7 U
Vinyl chloride	5.1 U	5.1 U	5.3 U	5.2 U	5.1 U	5.5 U	5.2 U	5.4 U
Xylenes (total)	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-024	U-025	U-025	U-026	U-026	U-027	U-028	U-029	U-029
Client Sample Description	U-24 (5-5.6)	U-25 (10.5)	U-25 (7.5)	PUC-4	U-26 (3.5)	U-27 (6-6.5)	U-28 (7-7.5)	U-29 (4)	U-29 (7)
Depth	5.5-6 ft	10.5-10.5 ft	7.5-7.5 ft	3.5-3.5 ft	3.5-3.5 ft	6-6.5 ft	7-7.5 ft	4-4 ft	7-7 ft
Date Sampled	10/13/02	10/12/02	10/12/02	10/12/02	10/12/02	10/13/02	10/12/02	10/12/02	10/12/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	140 Property	140 Property	140 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
1,1,2,2-Tetrachloroethane	2.6 UJ	3.0 U	2.5 U	2.6 UJ	2.6 UJ	2.6 UJ	2.5 UJ	2.5 UJ	2.5 UJ
1,1,2-Trichloroethane	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
1,1-Dichloroethane	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
1,1-Dichloroethene	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
1,2-Dichlorobenzene	5.3 U	6.1 U	5.0 U	5.3 U	5.3 U	5.1 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethane	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
1,2-Dichloropropane	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
1,3-Dichlorobenzene	5.3 U	6.1 U	5.0 U	5.3 U	5.3 U	5.1 U	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	5.3 U	6.1 U	5.0 U	5.3 U	5.3 U	5.1 U	5.0 U	5.0 U	5.0 U
2-Butanone (MEK)	11 U	12 U	10 U	11 UJ	11 UJ	10 U	10 UJ	10 UJ	10 UJ
2-Hexanone	11 UJ	12 U	10 U	11 UJ	11 UJ	10 UJ	10 UJ	10 UJ	10 UJ
4-Methyl-2-pentanone	11 UJ	12 U	10 U	11 UJ	11 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Acetone	11 UJ	10 J	8.0 J	11 UJ	11 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Benzene	2.6 U	3.0 U	2.5 U	1.6 J	1.0 J	2.6 U	2.5 U	2.5 U	2.5 U
Bromodichloromethane	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Bromoform	2.6 UJ	3.0 U	2.5 U	2.6 U	2.6 U	2.6 UJ	2.5 U	2.5 U	2.5 U
Bromomethane	5.3 UJ	6.1 UJ	5.0 UJ	5.3 UJ	5.3 UJ	5.1 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Carbon disulfide	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Carbon tetrachloride	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Chlorobenzene	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Chloroethane	5.3 UJ	6.1 UJ	5.0 UJ	5.3 UJ	5.3 UJ	5.1 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Chloroform	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Chloromethane	5.3 U	6.1 U	5.0 U	5.3 U	5.3 U	5.1 U	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	2.6 U	3.0 U	2.5 U	0.96 J	3.5	2.6 U	2.5 U	2.5 U	2.5 U
cis-1,3-Dichloropropene	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Dibromochloromethane	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Ethylbenzene	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Methylene chloride	6.3 UJ	6.1 UJ	5.0 UJ	7.9 UJ	8.0 UJ	6.2 UJ	7.3 UJ	6.7 UJ	7.1 UJ
Styrene	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Tetrachloroethene	3.0	3.4	47	190	330	2.6 U	2.5 U	2.5 U	2.5 U
Toluene	0.29 J	3.0 U	2.5 U	0.99 J	0.70 J	2.6 U	0.38 J	0.37 J	0.37 J
trans-1,2-Dichloroethene	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
trans-1,3-Dichloropropene	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U
Trichloroethene	2.6 U	3.0 U	2.5 U	2.4 J	5.6	2.6 U	2.5 U	2.5 U	2.5 U
Vinyl chloride	5.3 U	6.1 U	5.0 U	5.3 U	5.3 U	5.1 U	5.0 U	5.0 U	5.0 U
Xylenes (total)	2.6 U	3.0 U	2.5 U	2.6 U	2.6 U	2.6 U	2.5 U	2.5 U	2.5 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-030	U-031	U-032	U-033	U-034	U-035B	U-036	U-037	U-037
Client Sample Description	U-30 (3)	U-31(3.8-4)	U-32 (3.5)	U-33 (4)	U-34(18.5-19)	U-35B (3-5)	U-36 (12-14)	PMC-8(DUP)	U-37(18.5-19)
Depth	3-3 ft	3.8-4 ft	3.5-3.5 ft	4-4 ft	18.5-19 ft	3.5-3.5 ft	12-14 ft	18.5-19 ft	18.5-19 ft
Date Sampled	10/12/02	10/08/02	10/9/02	10/9/02	10/14/02	10/09/02	10/08/02	10/15/02	10/15/02
Property ID	140 Property	140 Property	140 Property	140 Property	140 Property	140 Property	140 Property	140 Property	140 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
1,1,2,2-Tetrachloroethane	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
1,1,2-Trichloroethane	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
1,1-Dichloroethane	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
1,1-Dichloroethene	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
1,2-Dichlorobenzene	5.6 U	5.4 U	5.5 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.5 U
1,2-Dichloroethane	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
1,2-Dichloropropane	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
1,3-Dichlorobenzene	5.6 U	5.4 U	5.5 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.5 U
1,4-Dichlorobenzene	5.6 U	5.4 U	5.5 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.5 U
2-Butanone (MEK)	11 U	11 U	11 U	10 U	10 U	10 U	10 U	10 U	11 U
2-Hexanone	11 UJ	11 UJ	11 UJ	10 UJ	10 UJ	10 U	10 UJ	10 U	11 U
4-Methyl-2-pentanone	11 UJ	11 UJ	11 UJ	10 UJ	10 UJ	10 U	10 UJ	10 U	11 U
Acetone	11 UJ	11 UJ	11 UJ	10 UJ	10 UJ	8.5 J	10 UJ	10 UJ	11 UJ
Benzene	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Bromodichloromethane	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Bromoform	2.8 U	2.7 U	2.8 U	2.5 U	2.6 UJ	2.6 U	2.5 U	2.5 U	2.8 U
Bromomethane	5.6 UJ	5.4 UJ	5.5 UJ	5.1 UJ	5.1 UJ	5.1 UJ	5.1 UJ	5.1 UJ	5.5 UJ
Carbon disulfide	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Carbon tetrachloride	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Chlorobenzene	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Chloroethane	5.6 UJ	5.4 UJ	5.5 UJ	5.1 UJ	5.1 UJ	5.1 UJ	5.1 UJ	5.1 UJ	5.5 UJ
Chloroform	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Chloromethane	5.6 U	5.4 U	5.5 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.5 U
cis-1,2-Dichloroethene	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
cis-1,3-Dichloropropene	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Dibromochloromethane	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Ethylbenzene	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Methylene chloride	13 UJ	6.1 UJ	5.8 UJ	5.1 UJ	5.1 UJ	9.0 UJ	5.1 UJ	5.1 UJ	5.5 UJ
Styrene	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Tetrachloroethene	12	44	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Toluene	1.1 J	0.70 J	1.4 J	0.44 J	0.35 J	0.37 J	2.5 U	2.5 U	2.8 U
trans-1,2-Dichloroethene	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
trans-1,3-Dichloropropene	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Trichloroethene	2.8 U	0.63 J	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U
Vinyl chloride	5.6 U	5.4 U	5.5 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.5 U
Xylenes (total)	2.8 U	2.7 U	2.8 U	2.5 U	2.6 U	2.6 U	2.5 U	2.5 U	2.8 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-038	U-039	U-040	U-041	U-042	U-043	U-044	U-046	U-047
Client Sample Description	U-38 (2.8-3)	U-39 (4)	U-40(11.5-12)	U-41(3.5-3.8)	U-42 (18-20)	U-43(18.5-19)	U-44(17-17.5)	U-46(19-19.5)	U-47(16)
Depth	2.8-3 ft	4-4 ft	11.5-12 ft	3.5-3.8 ft	18-20 ft	18.5-19 ft	17-17.5 ft	19-19.5 ft	16-16 ft
Date Sampled	10/08/02	10/10/02	10/15/02	10/15/02	10/14/02	10/29/02	10/29/02	10/15/02	10/17/02
Property ID	140 Property	140 Property	140 Property	140 Property	140 Property	100 Property	100 Property	140 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
1,1,2,2-Tetrachloroethane	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
1,1,2-Trichloroethane	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
1,1-Dichloroethane	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
1,1-Dichloroethene	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
1,2-Dichlorobenzene	5.1 U	5.1 U	5.1 U	5.9 U	5.1 U	5.2 U	5.1 U	5.1 U	5.4 U
1,2-Dichloroethane	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
1,2-Dichloropropane	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
1,3-Dichlorobenzene	5.1 U	5.1 U	5.1 U	5.9 U	5.1 U	5.2 U	5.1 U	5.1 U	5.4 U
1,4-Dichlorobenzene	5.1 U	5.1 U	5.1 U	5.9 U	5.1 U	5.2 U	5.1 U	5.1 U	5.4 U
2-Butanone (MEK)	10 U	10 U	10 U	12 U	8.1 J	10 U	10 U	10 U	11 U
2-Hexanone	10 UJ	10 U	10 U	12 U	10 U	10 UJ	10 UJ	10 U	11 U
4-Methyl-2-pentanone	10 UJ	10 U	10 U	12 U	10 U	10 UJ	10 UJ	10 U	11 U
Acetone	10 UJ	10 UJ	10 UJ	12 UJ	10 UJ	10 UJ	10 UJ	10 UJ	11 UJ
Benzene	2.5 U	2.5 U	2.5 U	1.8 J	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Bromodichloromethane	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Bromoform	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Bromomethane	5.1 UJ	5.1 UJ	5.1 UJ	5.9 UJ	5.1 UJ	5.2 UJ	5.1 UJ	5.1 UJ	5.4 UJ
Carbon disulfide	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Carbon tetrachloride	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Chlorobenzene	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Chloroethane	5.1 UJ	5.1 UJ	5.1 UJ	5.9 UJ	5.1 UJ	5.2 UJ	5.1 UJ	5.1 UJ	5.4 UJ
Chloroform	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Chloromethane	5.1 U	5.1 U	5.1 U	5.9 U	5.1 UJ	5.2 U	5.1 U	5.1 U	5.4 U
cis-1,2-Dichloroethene	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
cis-1,3-Dichloropropene	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Dibromochloromethane	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Ethylbenzene	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Methylene chloride	5.2 UJ	9.8 UJ	5.1 UJ	5.9 UJ	5.1 UJ	5.2 UJ	5.1 UJ	5.1 UJ	5.4 UJ
Styrene	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Tetrachloroethene	1.2 J	2.5 U	2.5 U	72	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Toluene	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
trans-1,2-Dichloroethene	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
trans-1,3-Dichloropropene	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Trichloroethene	2.5 U	2.5 U	2.5 U	1.5 J	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U
Vinyl chloride	5.1 U	5.1 U	5.1 U	5.9 U	5.1 U	5.2 U	5.1 U	5.1 U	5.4 U
Xylenes (total)	2.5 U	2.5 U	2.5 U	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-048B	U-049	U-050	U-051	U-052	U-053	U-054	U-055	U-056
Client Sample Description	U-48B (6-12)	U-49(18.5-19)	U-50(19-19.5)	U-51(18.5-19)	U-52(18.5-19)	U-53(18.5-19)	U-54(3.5-4)	U-55(19-19.5)	U-56(18.5-19)
Depth	0.5-1 ft	18.5-19 ft	19-19.5 ft	18.5-19 ft	18.5-19 ft	18.5-19 ft	3.5-4 ft	19-19.5 ft	18.5-19 ft
Date Sampled	10/10/02	10/28/02	10/28/02	10/28/02	10/28/02	10/28/02	10/29/02	10/29/02	10/17/02
Property ID	70 Property	140 Property	140 Property	140 Property	140 Property	140 Property	100 Property	100 Property	70 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
1,1-Dichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
1,1-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
1,2-Dichlorobenzene	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.5 U	0.78 J	5.1 U
1,2-Dichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
1,2-Dichloropropane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
1,3-Dichlorobenzene	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.5 U	0.49 J	5.1 U
1,4-Dichlorobenzene	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.5 U	0.74 J	5.1 U
2-Butanone (MEK)	10 U	10 U	11 U	10 U	10 U	10 U	11 U	10 U	10 U
2-Hexanone	10 UJ	10 UJ	11 UJ	10 UJ	10 UJ	10 UJ	11 UJ	10 UJ	10 U
4-Methyl-2-pentanone	10 UJ	10 UJ	11 UJ	10 UJ	10 UJ	10 UJ	11 UJ	10 UJ	10 U
Acetone	14 UJ	10 UJ	11 UJ	10 UJ	10 UJ	10 UJ	11 UJ	10 UJ	10 UJ
Benzene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Bromodichloromethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Bromoform	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Bromomethane	5.2 UJ	5.1 UJ	5.3 UJ	5.1 UJ	5.2 UJ	5.1 UJ	5.5 UJ	5.1 U	5.1 UJ
Carbon disulfide	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Carbon tetrachloride	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Chlorobenzene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Chloroethane	5.2 UJ	5.1 UJ	5.3 UJ	5.1 UJ	5.2 UJ	5.1 UJ	5.5 UJ	5.1 UJ	5.1 UJ
Chloroform	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Chloromethane	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.5 U	5.1 U	5.1 U
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	0.50 J	2.6 U	2.5 U
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Ethylbenzene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Methylene chloride	5.4 UJ	5.1 UJ	5.3 UJ	5.1 UJ	5.2 UJ	5.1 UJ	6.6 UJ	5.1 UJ	5.1 UJ
Styrene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	0.97 J	2.5 U
Tetrachloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	100	6.1	2.5 U
Toluene	1.4 J	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	4.3 U	2.5 U
trans-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U
Trichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	0.93 J	2.6 U	2.5 U
Vinyl chloride	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.5 U	5.1 U	5.1 U
Xylenes (total)	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-057		U-057		U-058		U-059		U-060		U-061		U-062		U-063		U-064	
Client Sample Description	U-57 (3.5-4)		U-57(13.5-14)		U-58 (4.5)		U-59 (3.5)		U-60 (7.5-8)		U-61 (7.5)		U-62 (7)		U-63 (8)		U-64 (11.5-12)	
Depth	3.5-4 ft		13.5-14 ft		4.5-4.5 ft		3.5-3.5 ft		7.5-8 ft		7.5-7.5 ft		7-7 ft		8-8 ft		11.5-12 ft	
Date Sampled	10/17/02		10/17/02		10/11/02		10/11/02		10/11/02		10/11/02		10/12/02		10/12/02		10/13/02	
Property ID	70 Property		70 Property		70 Property		70 Property		70 Property		70 Property		70 Property		70 Property		100 Property	
Units	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
1,1,2,2-Tetrachloroethane	3.0	UJ	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
1,1,2-Trichloroethane	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
1,1-Dichloroethane	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
1,1-Dichloroethene	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
1,2-Dichlorobenzene	5.9	U	5.1	U	5.9	U	5.3	U	5.3	U	5.1	U	5.1	U	5.9	U	5.1	U
1,2-Dichloroethane	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
1,2-Dichloropropane	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
1,3-Dichlorobenzene	5.9	U	5.1	U	5.9	U	5.3	U	5.3	U	5.1	U	5.1	U	5.9	U	5.1	U
1,4-Dichlorobenzene	5.9	U	5.1	U	5.9	U	5.3	U	5.3	U	5.1	U	5.1	U	5.9	U	5.1	U
2-Butanone (MEK)	12	U	10	U	12	U	11	U	11	U	10	U	10	U	12	U	10	U
2-Hexanone	12	UJ	10	U	12	U	11	U	11	U	10	U	10	UJ	12	UJ	10	UJ
4-Methyl-2-pentanone	12	UJ	10	U	12	UJ	11	UJ	11	UJ	10	UJ	10	UJ	12	UJ	10	UJ
Acetone	12	UJ	10	UJ	12	UJ	11	UJ	11	UJ	10	UJ	10	UJ	12	UJ	10	UJ
Benzene	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Bromodichloromethane	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Bromoform	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	UJ
Bromomethane	5.9	UJ	5.1	UJ	5.9	UJ	5.3	UJ	5.3	UJ	5.1	UJ	5.1	UJ	5.9	UJ	5.1	UJ
Carbon disulfide	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Carbon tetrachloride	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Chlorobenzene	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Chloroethane	5.9	UJ	5.1	UJ	5.9	UJ	5.3	UJ	5.3	U	5.1	UJ	5.1	UJ	5.9	UJ	5.1	UJ
Chloroform	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Chloromethane	5.9	U	5.1	U	5.9	U	5.3	U	5.3	U	5.1	U	5.1	U	5.9	U	5.1	UJ
cis-1,2-Dichloroethene	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
cis-1,3-Dichloropropene	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Dibromochloromethane	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Ethylbenzene	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Methylene chloride	9.0	B	5.1	UJ	11	UJ	10	UJ	10	UJ	9.4	UJ	10	UJ	13	UJ	5.1	UJ
Styrene	3.0	UJ	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Tetrachloroethene	7.0		2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Toluene	0.62	J	2.6	U	0.73	J	0.64	J	0.53	J	0.45	J	2.5	U	0.35	J	0.49	J
trans-1,2-Dichloroethene	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
trans-1,3-Dichloropropene	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Trichloroethene	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U
Vinyl chloride	5.9	U	5.1	U	5.9	U	5.3	U	5.3	U	5.1	U	5.1	U	5.9	U	5.1	U
Xylenes (total)	3.0	U	2.6	U	3.0	U	2.7	U	2.6	U	2.6	U	2.5	U	3.0	U	2.5	U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-084	U-086A	U-087	U-088	U-090	U-091	U-092	U-093	U-094
Client Sample Description	U-84(7.5)	U-86 (15.5-16)	U-87(5.5-8)	U-88(4-4.5)	U-90(2-2.3)	U-91(2-2.3)	U-92 (19-19.5)	U-93 (19.5-20)	U-94(10)
Depth	7.5-7.5 ft	15.5-16 ft	5.5-8 ft	4-4.5 ft	2-2.3 ft	2-2.3 ft	19-19.5 ft	19.5-20 ft	10-10 ft
Date Sampled	10/18/02	10/19/02	10/18/02	10/18/02	10/18/02	10/18/02	10/19/02	10/19/02	10/22/02
Property ID	100 Property	100 Property	100 Property	100 Property	140 Property	140 Property	100 Property	100 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	160 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	160 U
1,1-Dichloroethane	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
1,1-Dichloroethene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
1,2-Dichlorobenzene	5.2 U	5.1 U	5.1 U	5.5 U	6.1 U	5.2 U	5.2 U	5.1 U	3.1 J
1,2-Dichloroethane	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
1,2-Dichloropropane	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
1,3-Dichlorobenzene	5.2 U	5.1 U	5.1 U	5.5 U	6.1 U	5.2 U	5.2 U	5.1 U	1.4 J
1,4-Dichlorobenzene	5.2 U	5.1 U	5.1 U	5.5 U	6.1 U	5.2 U	5.2 U	5.1 U	1.7 J
2-Butanone (MEK)	10 U	10 U	10 U	11 U	12 U	10 U	10 U	10 U	13 U
2-Hexanone	10 U	10 UJ	10 U	11 U	12 U	10 U	10 UJ	10 UJ	630 UJ
4-Methyl-2-pentanone	10 U	10 U	10 U	11 U	12 U	10 U	10 U	10 U	13 U
Acetone	10 UJ	10 U	10 UJ	11 J	12 UJ	10 UJ	10 U	10 U	13 UJ
Benzene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
Bromodichloromethane	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
Bromoform	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	160 U
Bromomethane	5.2 UJ	5.1 U	5.1 UJ	5.5 UJ	6.1 UJ	5.2 UJ	5.2 U	5.1 U	6.3 UJ
Carbon disulfide	2.6 U	2.6 UJ	2.5 U	2.7 U	3.0 U	2.6 U	2.6 UJ	2.6 UJ	3.2 U
Carbon tetrachloride	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 UJ	2.6 U	3.2 U
Chlorobenzene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	160 U
Chloroethane	5.2 UJ	5.1 UJ	5.1 UJ	5.5 UJ	6.1 UJ	5.2 UJ	5.2 UJ	5.1 UJ	6.3 UJ
Chloroform	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
Chloromethane	5.2 UJ	5.1 UJ	5.1 UJ	5.5 UJ	6.1 UJ	5.2 U	5.2 UJ	5.1 UJ	6.3 U
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	21
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
Dibromochloromethane	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	3.2 U
Ethylbenzene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	160 U
Methylene chloride	5.2 UJ	5.1 UJ	5.1 UJ	5.5 UJ	6.1 UJ	5.2 UJ	5.2 UJ	5.1 UJ	7.5 UJ
Styrene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	160 U
Tetrachloroethene	2.6 U	2.6 U	2.5 U	8.2	11	2.5 J	2.6 U	2.6 U	12000
Toluene	2.6 U	2.6 U	2.5 U	2.7 U	0.41 J	2.6 U	2.6 U	2.6 U	160 U
trans-1,2-Dichloroethene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	0.98 J
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	160 U
Trichloroethene	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	93
Vinyl chloride	5.2 U	5.1 U	5.1 U	5.5 U	6.1 U	5.2 U	5.2 U	5.1 U	6.3 U
Xylenes (total)	2.6 U	2.6 U	2.5 U	2.7 U	3.0 U	2.6 U	2.6 U	2.6 U	160 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-094	U-095	U-096B	U-096B	U-096B	U-097	U-098	U-099
Client Sample Description	U-94DUP(10)	U-95 (19.5-20)	U-96B(14-15)	U-96B(19.5-20)	U-96BDUP (14-15)	U-97(8)	U-98 (12)	U-99(12-12.5)
Depth	10-10 ft	19.5-20 ft	14-15 ft	19.5-20 ft	14-15 ft	8-8 ft	12-12 ft	12-12.5 ft
Date Sampled	10/22/02	10/20/02	10/20/02	10/20/02	10/20/02	10/21/02	10/21/02	10/20/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	70 Property	70 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
1,1,2,2-Tetrachloroethane	300 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
1,1,2-Trichloroethane	300 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
1,1-Dichloroethane	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
1,1-Dichloroethene	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
1,2-Dichlorobenzene	2.5 J	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.1 U
1,2-Dichloroethane	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
1,2-Dichloropropane	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
1,3-Dichlorobenzene	1.1 J	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.1 U
1,4-Dichlorobenzene	1.5 J	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.1 U
2-Butanone (MEK)	12 U	10 U	10 U	11 U	10 U	10 U	10 U	10 U
2-Hexanone	1200 UJ	10 UJ	10 UJ	11 U	10 UJ	10 U	10 U	10 UJ
4-Methyl-2-pentanone	12 U	10 U	10 U	11 UJ	10 U	10 U	10 U	10 U
Acetone	12 UJ	10 U	10 U	11 UJ	10 U	10 UJ	10 U	10 U
Benzene	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Bromodichloromethane	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Bromoform	300 U	2.6 U	2.6 U	2.6 UJ	2.6 U	2.6 U	2.6 U	2.5 U
Bromomethane	6.0 UJ	5.2 U	5.1 U	5.3 UJ	5.1 U	5.2 UJ	5.1 U	5.1 U
Carbon disulfide	3.0 U	2.6 UJ	2.6 UJ	2.6 U	2.6 UJ	2.6 U	2.6 U	2.5 UJ
Carbon tetrachloride	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Chlorobenzene	300 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Chloroethane	6.0 UJ	5.2 UJ	5.1 UJ	5.3 UJ	5.1 UJ	5.2 UJ	5.1 U	5.1 UJ
Chloroform	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Chloromethane	6.0 U	5.2 UJ	5.1 UJ	5.3 U	5.1 UJ	5.2 U	5.1 U	5.1 UJ
cis-1,2-Dichloroethene	29	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
cis-1,3-Dichloropropene	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Dibromochloromethane	3.0 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Ethylbenzene	300 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Methylene chloride	7.1 UJ	5.2 UJ	6.9 UJ	5.3 UJ	6.8 UJ	5.2 UJ	5.1 UJ	6.6 UJ
Styrene	300 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Tetrachloroethene	20000	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Toluene	300 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
trans-1,2-Dichloroethene	0.91 J	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
trans-1,3-Dichloropropene	300 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Trichloroethene	75	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U
Vinyl chloride	6.0 U	5.2 U	5.1 U	5.3 U	5.1 U	5.2 U	5.1 U	5.1 U
Xylenes (total)	300 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.5 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-099	U-100C	U-100C	U-101	U-101	U-103	U-105	U-106
Client Sample Description	U-99DUP(12-12.5)	U-100C(19.5-20)	U-100C(13.5-14)	U-101(11.5-12)	U-101(5.5-6)	U-103(7.5-8)	U-105 (5)	U-106(7.5-8)
Depth	12-12.5 ft	19.5-20 ft	13.5-14 ft	11.5-12 ft	5.5-6 ft	7.5-8 ft	5-5 ft	7.5-8 ft
Date Sampled	10/20/02	10/20/02	10/20/02	10/19/02	10/19/02	10/19/02	10/21/02	10/22/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	70 Property	70 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
1,1-Dichloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
1,1-Dichloroethene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
1,2-Dichlorobenzene	5.1 U	5.1 U	5.2 U	5.1 U	5.3 U	5.6 U	5.2 U	5.1 U
1,2-Dichloroethane	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
1,2-Dichloropropane	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
1,3-Dichlorobenzene	5.1 U	5.1 U	5.2 U	5.1 U	5.3 U	5.6 U	5.2 U	5.1 U
1,4-Dichlorobenzene	5.1 U	5.1 U	5.2 U	5.1 U	5.3 U	5.6 U	5.2 U	5.1 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	11 U	11 U	10 U	10 U
2-Hexanone	10 UJ	10 UJ	10 UJ	10 UJ	11 UJ	11 UJ	10 U	10 U
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	11 U	11 U	10 U	10 U
Acetone	10 U	10 U	10 U	10 U	34	11 U	10 U	10 UJ
Benzene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Bromodichloromethane	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Bromoform	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Bromomethane	5.1 U	5.1 U	5.2 U	5.1 U	5.3 U	5.6 U	5.2 U	5.1 UJ
Carbon disulfide	2.6 UJ	2.6 UJ	2.6 UJ	2.5 UJ	2.6 UJ	2.8 UJ	2.6 U	2.6 U
Carbon tetrachloride	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Chlorobenzene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Chloroethane	5.1 UJ	5.1 UJ	5.2 UJ	5.1 UJ	5.3 UJ	5.6 UJ	5.2 U	5.1 UJ
Chloroform	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Chloromethane	5.1 UJ	5.1 UJ	5.2 UJ	5.1 UJ	5.3 UJ	5.6 UJ	5.2 U	5.1 U
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Ethylbenzene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Methylene chloride	7.3 UJ	6.2 UJ	6.5 UJ	5.1 UJ	5.9 UJ	5.6 UJ	5.2 UJ	5.1 UJ
Styrene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Tetrachloroethene	2.6 U	2.6 U	2.6 U	2.5 U	38	2.8 U	2.6 U	2.6 U
Toluene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
trans-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Trichloroethene	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U
Vinyl chloride	5.1 U	5.1 U	5.2 U	5.1 U	5.3 U	5.6 U	5.2 U	5.1 U
Xylenes (total)	2.6 U	2.6 U	2.6 U	2.5 U	2.6 U	2.8 U	2.6 U	2.6 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-107B	U-108	U-108	U-109	U-110	U-110	U-111	U-112	U-113
Client Sample Description	U-107B (19)	U-108 (15)	U-108 (18)	U-109(6-7)	U-110(12)	U-110(2.5-3)	U-111(12)	U-112 (5)	U-113(7.5-8)
Depth	19-19 ft	15-15 ft	18-18 ft	6-7 ft	12-12 ft	2.5-3 ft	12-12 ft	5-5 ft	7.5-8 ft
Date Sampled	10/20/02	10/20/02	10/20/02	10/22/02	10/22/02	10/22/02	10/22/02	10/21/02	10/21/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	70 Property	70 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U
1,1-Dichloroethane	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
1,1-Dichloroethene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
1,2-Dichlorobenzene	5.2 U	5.1 U	5.1 U	5.7 U	5.1 U	2700 U	5.2 U	5.2 U	6.1 U
1,2-Dichloroethane	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
1,2-Dichloropropane	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
1,3-Dichlorobenzene	5.2 U	5.1 U	5.1 U	5.7 U	5.1 U	2700 U	5.2 U	5.2 U	6.1 U
1,4-Dichlorobenzene	5.2 U	5.1 U	5.1 U	5.7 U	5.1 U	2700 U	5.2 U	5.2 U	6.1 U
2-Butanone (MEK)	10 U	10 U	10 U	11 U	10 U	11 U	10 U	10 U	12 U
2-Hexanone	10 U	10 UJ	10 U	11 U	10 U	5300 UJ	10 U	10 U	12 U
4-Methyl-2-pentanone	10 U	10 U	10 U	11 U	10 U	11 U	10 U	10 U	12 U
Acetone	10 U	10 U	10 U	11 UJ	10 UJ	17 UJ	4.2 J	10 U	12 UJ
Benzene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
Bromodichloromethane	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
Bromoform	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U
Bromomethane	5.2 U	5.1 U	5.1 U	5.7 UJ	5.1 UJ	5.3 UJ	5.2 UJ	5.2 U	6.1 UJ
Carbon disulfide	2.6 U	2.6 UJ	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
Carbon tetrachloride	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
Chlorobenzene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U
Chloroethane	5.2 U	5.1 UJ	5.1 U	5.7 UJ	5.1 UJ	5.3 UJ	5.2 UJ	5.2 U	6.1 UJ
Chloroform	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
Chloromethane	5.2 U	5.1 UJ	5.1 U	5.7 U	5.1 U	5.3 U	5.2 U	5.2 U	6.1 U
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	2.7 U	2.6 U	2.6 U	3.1 U
Ethylbenzene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U
Methylene chloride	5.2 UJ	5.1 UJ	5.1 UJ	5.7 UJ	5.1 UJ	6.2 UJ	5.2 UJ	5.2 UJ	6.1 UJ
Styrene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U
Tetrachloroethene	2.6 U	2.6 U	2.6 U	1.3 J	2.8 U	71000	2.6 U	2.6 U	1.3 J
Toluene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U
trans-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	8.7	2.6 U	2.6 U	3.1 U
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U
Trichloroethene	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	85	2.6 U	2.6 U	3.1 U
Vinyl chloride	5.2 U	5.1 U	5.1 U	5.7 U	5.1 U	5.3 U	5.2 U	5.2 U	6.1 U
Xylenes (total)	2.6 U	2.6 U	2.6 U	2.9 U	2.5 U	1300 U	2.6 U	2.6 U	3.1 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-114	U-114	U-115	U-116	U-116	U-117	U-117	U-118
Client Sample Description	U-114(15-15.5)	U-114(18.5-19)	U-115(19.5)	U-116(18.5-19)	U-116(39-39.5)	U-117(28)	U-117(39)	U-118(21-21.5)
Depth	15-15.5 ft	18.5-19 ft	19.5-19.5 ft	18.5-19 ft	39-39.5 ft	28-28 ft	39-39 ft	21-21.5 ft
Date Sampled	10/29/02	10/29/02	10/23/02	10/30/02	10/30/02	10/23/02	10/23/02	10/29/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
1,1,2,2-Tetrachloroethane	13000 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
1,1,2-Trichloroethane	13000 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
1,1-Dichloroethane	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
1,1-Dichloroethene	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
1,2-Dichlorobenzene	25000 U	30000 U	5.2 U	5.2 U	5.2 U	2700 U	6.6 J	5.1 U
1,2-Dichloroethane	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
1,2-Dichloropropane	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
1,3-Dichlorobenzene	25000 U	30000 U	5.2 U	5.2 U	5.2 U	2700 U	26 U	5.1 U
1,4-Dichlorobenzene	25000 U	30000 U	5.2 U	5.2 U	5.2 U	2700 U	26 U	5.1 U
2-Butanone (MEK)	10 U	59000 U	10 U	10 U	10 U	5400 U	52 U	10 U
2-Hexanone	51000 U	59000 U	10 U	10 UJ	10 UJ	5400 U	52 U	10 UJ
4-Methyl-2-pentanone	10 UJ	59000 UJ	10 U	10 UJ	10 UJ	5400 U	52 U	10 UJ
Acetone	10 UJ	59000 UJ	5.5 J	10 UJ	2.7 J	5400 UJ	52 UJ	10 UJ
Benzene	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Bromodichloromethane	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Bromoform	13000 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Bromomethane	5.1 UJ	30000 UJ	5.2 UJ	5.2 U	5.2 U	2700 UJ	26 UJ	5.1 UJ
Carbon disulfide	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Carbon tetrachloride	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Chlorobenzene	13000 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Chloroethane	5.1 UJ	30000 UJ	5.2 UJ	5.2 UJ	5.2 UJ	2700 UJ	26 UJ	5.1 UJ
Chloroform	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Chloromethane	5.1 U	30000 U	5.2 U	5.2 U	5.2 U	2700 U	26 U	5.1 U
cis-1,2-Dichloroethene	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
cis-1,3-Dichloropropene	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Dibromochloromethane	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Ethylbenzene	13000 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Methylene chloride	5.1 UJ	30000 UJ	5.2 UJ	5.2 UJ	5.2 UJ	2700 UJ	26 UJ	5.1 UJ
Styrene	13000 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Tetrachloroethene	540000	500000	2.6 U	2.6 U	9.2	44000	440	2.5 U
Toluene	17000 U	21000 U	2.6 U	6.3 U	5.2 U	1300 U	13 U	2.5 U
trans-1,2-Dichloroethene	2.5 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
trans-1,3-Dichloropropene	13000 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Trichloroethene	100	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U
Vinyl chloride	5.1 U	30000 U	5.2 U	5.2 U	5.2 U	2700 U	26 U	5.1 U
Xylenes (total)	13000 U	15000 U	2.6 U	2.6 U	2.6 U	1300 U	13 U	2.5 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-118	U-119	U-119	U-120	U-120	U-120	U-120	U-121
Client Sample Description	U-118(39.5-40)	PMC-310	U-119(18.5-19)	PMC 300(DUP)	U-120(18.5-19)	U-120(39-39.5)	U-120(8.5-9)	U-121(20)
Depth	39.5-40 ft	- ft	18.5-19 ft	- ft	18.5-19 ft	39-39.5 ft	8.5-9 ft	20-20 ft
Date Sampled	10/29/02	10/30/02	10/30/02	10/29/02	10/29/02	10/29/02	10/29/02	10/22/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
1,2-Dichlorobenzene	5.2 U	5.1 U	5.2 U	5.1 U	5.9 U	5.1 U	5.1 U	5.1 U
1,2-Dichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
1,2-Dichloropropane	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
1,3-Dichlorobenzene	5.2 U	5.1 U	5.2 U	5.1 U	5.9 U	5.1 U	5.1 U	5.1 U
1,4-Dichlorobenzene	5.2 U	5.1 U	5.2 U	5.1 U	5.9 U	5.1 U	5.1 U	5.1 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	12 U	10 U	10 U	10 U
2-Hexanone	10 UJ	10 UJ	10 U	10 U	12 U	10 U	10 UJ	10 U
4-Methyl-2-pentanone	10 UJ	10 UJ	10 U	10 U	12 U	10 U	10 U	10 U
Acetone	10 UJ	10 UJ	10 U	10 UJ	12 UJ	10 UJ	10 UJ	10 UJ
Benzene	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Bromodichloromethane	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Bromoform	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Bromomethane	5.2 UJ	5.1 U	5.2 U	5.1 UJ	5.9 UJ	5.1 UJ	5.1 UJ	5.1 UJ
Carbon disulfide	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Carbon tetrachloride	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Chlorobenzene	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Chloroethane	5.2 UJ	5.1 U	5.2 UJ	5.1 UJ	5.9 UJ	5.1 UJ	5.1 UJ	5.1 UJ
Chloroform	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Chloromethane	5.2 U	5.1 U	5.2 U	5.1 UJ	5.9 UJ	5.1 UJ	5.1 U	5.1 U
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Ethylbenzene	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Methylene chloride	5.2 UJ	5.1 UJ	5.2 UJ	5.1 UJ	5.9 UJ	5.1 UJ	5.1 UJ	5.1 UJ
Styrene	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Tetrachloroethene	2.3 J	2.6 U	1.4 J	71	3.0 U	2.6 U	120	1.9 J
Toluene	2.6 U	3.5 U	3.7 U	0.52 J	3.0 U	2.6 U	2.6 U	2.6 U
trans-1,2-Dichloroethene	2.6 U	2.6 U	2.6 UJ	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U
Trichloroethene	2.6 U	2.6 U	2.6 UJ	0.27 J	3.0 U	2.6 U	1.1 J	2.6 U
Vinyl chloride	5.2 U	5.1 U	5.2 U	5.1 U	5.9 U	5.1 U	5.1 U	5.1 U
Xylenes (total)	2.6 U	2.6 U	2.6 U	2.6 U	3.0 U	2.6 U	2.6 U	2.6 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-122	U-123	U-124	U-124	U-124	U-125	U-125	U-126
Client Sample Description	U-122(18.5-19	U-123(10.5-11)	U-124(14-14.5)	U-124(33-34)	U-124(38.5-40)	U-125(18.5-19)	U-125 (5-6)	U-126(10.5-11)
Depth	18.5-19 ft	10.5-11 ft	14-14.5 ft	33-34 ft	38.5-40 ft	18.5-19 ft	5-6 ft	10.5-11 ft
Date Sampled	10/28/02	10/29/02	10/30/02	10/30/02	10/30/02	10/30/02	10/30/02	10/30/02
Property ID	140 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
1,1,2,2-Tetrachloroethane	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
1,1,2-Trichloroethane	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
1,1-Dichloroethane	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
1,1-Dichloroethene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
1,2-Dichlorobenzene	5.1 U	5.1 U	5.1 U	5.4 U	5.1 U	5.4 U	5.4 U	5.1 U
1,2-Dichloroethane	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
1,2-Dichloropropane	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
1,3-Dichlorobenzene	5.1 U	5.1 U	5.1 U	5.4 U	5.1 U	5.4 U	5.4 U	5.1 U
1,4-Dichlorobenzene	5.1 U	5.1 U	5.1 U	5.4 U	5.1 U	5.4 U	5.4 U	5.1 U
2-Butanone (MEK)	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
2-Hexanone	10 UJ	10 U	10 UJ	11 UJ	10 UJ	11 UJ	11 UJ	10 UJ
4-Methyl-2-pentanone	10 UJ	10 U	10 UJ	11 UJ	10 UJ	11 UJ	11 U	10 UJ
Acetone	10 UJ	10 UJ	10 UJ	11 UJ	3.0 J	11 U	11 U	10 UJ
Benzene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 UJ	2.5 U
Bromodichloromethane	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Bromoform	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Bromomethane	5.1 UJ	5.1 UJ	5.1 U	5.4 U	5.1 U	5.4 U	5.4 UJ	5.1 U
Carbon disulfide	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Carbon tetrachloride	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Chlorobenzene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Chloroethane	5.1 UJ	5.1 UJ	5.1 UJ	5.4 UJ	5.1 U	5.4 UJ	5.4 UJ	5.1 UJ
Chloroform	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 UJ	2.7 U	2.5 U
Chloromethane	5.1 U	5.1 UJ	5.1 U	5.4 U	5.1 U	5.4 U	5.4 U	5.1 U
cis-1,2-Dichloroethene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
cis-1,3-Dichloropropene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Dibromochloromethane	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Ethylbenzene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Methylene chloride	5.1 UJ	5.1 UJ	5.1 UJ	5.4 UJ	5.1 UJ	5.4 UJ	5.4 UJ	5.1 UJ
Styrene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Tetrachloroethene	1.2 J	2.6 U	1.2 J	2.7 U	2.6 U	2.7 U	600	2.5 U
Toluene	2.5 U	2.6 U	3.4 U	5.2 U	3.5 U	11 U	2.7 U	5.3 U
trans-1,2-Dichloroethene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
trans-1,3-Dichloropropene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U
Trichloroethene	2.5 U	2.6 U	2.6 U	2.7 U	2.6 UJ	2.7 U	1.4 J	2.5 U
Vinyl chloride	5.1 U	5.1 U	5.1 U	5.4 U	5.1 U	5.4 U	5.4 U	5.1 U
Xylenes (total)	2.5 U	2.6 U	2.6 U	2.7 U	2.6 U	2.7 U	2.7 U	2.5 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-127	U-128	U-128	U-128	U-129	U-129	U-130	U-130
Client Sample Description	U-127(19.5-20)	U-128(19-19.5)	U-128(39.5-40)	U-128 (6-6.5)	U-129(19.5-20)	U-129(39.5-40)	U-130(21-21.5)	U-130(39.5-40)
Depth	19.5-20 ft	19-19.5 ft	39.5-40 ft	6-6.5 ft	19.5-20 ft	39.5-40 ft	21-21.5 ft	39.5-40 ft
Date Sampled	10/30/02	10/30/02	10/30/02	10/30/02	10/31/02	10/31/02	10/31/02	10/31/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethane	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethene	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
1,2-Dichlorobenzene	5.1 U	5.1 U	5.4 U	1200 U	5.4 U	5.2 U	5.2 U	5.2 U
1,2-Dichloroethane	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
1,2-Dichloropropane	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
1,3-Dichlorobenzene	5.1 U	5.1 U	5.4 U	1200 U	5.4 U	5.2 U	5.2 U	5.2 U
1,4-Dichlorobenzene	5.1 U	5.1 U	5.4 U	1200 U	5.4 U	5.2 U	5.2 U	5.2 U
2-Butanone (MEK)	10 U	10 U	11 U	2500 U	11 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	11 U	2500 U	11 UJ	10 UJ	10 UJ	10 UJ
4-Methyl-2-pentanone	10 U	10 U	11 U	2500 UJ	11 UJ	10 UJ	10 UJ	10 UJ
Acetone	2.9 J	2.6 J	3.5 J	2500 U	11 UJ	10 UJ	10 UJ	10 UJ
Benzene	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Bromodichloromethane	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Bromoform	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Bromomethane	5.1 U	5.1 U	5.4 U	1200 U	5.4 U	5.2 U	5.2 U	5.2 U
Carbon disulfide	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Carbon tetrachloride	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Chlorobenzene	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Chloroethane	5.1 UJ	5.1 UJ	5.4 UJ	1200 U	5.4 U	5.2 U	5.2 U	5.2 U
Chloroform	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Chloromethane	5.1 U	5.1 U	5.4 U	1200 U	5.4 U	5.2 U	5.2 U	5.2 U
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Dibromochloromethane	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Ethylbenzene	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Methylene chloride	5.1 UJ	5.1 UJ	5.4 UJ	1200 UJ	5.4 UJ	5.2 UJ	5.2 UJ	5.2 UJ
Styrene	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Tetrachloroethene	2.6 U	2.6 U	2.7 U	8100	2.7 U	2.6 U	2.6 U	2.6 U
Toluene	3.8 U	3.7 U	4.1 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
trans-1,2-Dichloroethene	2.6 UJ	2.6 UJ	2.7 UJ	620 U	2.7 U	2.6 U	2.6 U	2.6 U
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U
Trichloroethene	2.6 UJ	2.6 UJ	2.7 UJ	620 U	1.3 J	2.6 U	2.6 U	2.6 U
Vinyl chloride	5.1 U	5.1 U	5.4 U	1200 U	5.4 U	5.2 U	5.2 U	5.2 U
Xylenes (total)	2.6 U	2.6 U	2.7 U	620 U	2.7 U	2.6 U	2.6 U	2.6 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-131	U-131	U-132	U-132	U-132	U-133	U-133	U-134
Client Sample Description	U-131(19.5-20)	U-131(39.5-40)	PMC-400	U-132(11-12)	U-132(19.5-20)	U-133(19.5-20)	U-133(39.5-40)	U-134(19.5-20)
Depth	19.5-20 ft	39.5-40 ft	11-12 ft	11-12 ft	19.5-20 ft	19.5-20 ft	39.5-40 ft	19.5-20 ft
Date Sampled	10/31/02	10/31/02	10/31/02	10/31/02	10/31/02	10/31/02	10/31/02	11/01/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,1-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,2-Dichlorobenzene	5.1 U	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.1 U	5.2 U
1,2-Dichloroethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,2-Dichloropropane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,3-Dichlorobenzene	5.1 U	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.1 U	5.2 U
1,4-Dichlorobenzene	5.1 U	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.1 U	5.2 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 U
4-Methyl-2-pentanone	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Acetone	10 UJ	3.4 J	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	9.6 J
Benzene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Bromodichloromethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Bromoform	2.6 U	2.6 UJ	2.6 U	2.6 U	2.6 U	2.6 UJ	2.6 U	2.6 UJ
Bromomethane	5.1 U	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.1 U	5.2 U
Carbon disulfide	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Carbon tetrachloride	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Chlorobenzene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Chloroethane	5.1 U	5.2 U	5.2 UJ	5.2 U	5.1 U	5.1 U	5.1 U	5.2 U
Chloroform	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Chloromethane	5.1 U	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.1 U	5.2 U
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Dibromochloromethane	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Ethylbenzene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Methylene chloride	5.1 UJ	5.2 UJ	5.2 UJ	5.2 UJ	5.1 UJ	5.1 UJ	5.1 UJ	9.6 U
Styrene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Tetrachloroethene	2.6 U	2.6 U	17	6.4	2.6 U	2.6 U	2.6 U	2.6 U
Toluene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
trans-1,2-Dichloroethene	2.6 U	2.6 U	2.6 UJ	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Trichloroethene	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Vinyl chloride	5.1 U	5.2 U	5.2 U	5.2 U	5.1 U	5.1 U	5.1 U	5.2 U
Xylenes (total)	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-134	U-135	U-136	U-137	U-138	U-139	U-140B	U-141	U-142
Client Sample Description	U-134(39.5-40)	U-135(19.5-20)	U-136(4-4.5)	U-137 (5-6)	U-138(5.5-6)	U-139(6-6.5)	U-140B(3-3.5)	U-141(1.5-2)	U-142(2.5-3)
Depth	39.5-40 ft	19.5-20 ft	4-4.5 ft	5-6 ft	5.5-6 ft	6-6.5 ft	3-3.5 ft	1.5-2 ft	2.5-3 ft
Date Sampled	11/01/02	10/31/02	12/09/02	12/09/02	12/09/02	12/09/02	12/09/02	12/09/02	12/09/02
Property ID	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	140 Property	140 Property	NCDPW
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
1,1,2,2-Tetrachloroethane	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
1,1,2-Trichloroethane	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
1,1-Dichloroethane	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
1,1-Dichloroethene	2.6 U	2.6 U	0.54 J	0.45 J	0.43 J	0.43 J	0.55 J	0.99 J	0.45 J
1,2-Dichlorobenzene	5.2 U	5.1 U	5.6 UJ	5.1 U	5.2 U	5.8 U	5.8 U	5.4 U	5.8 U
1,2-Dichloroethane	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
1,2-Dichloropropane	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
1,3-Dichlorobenzene	5.2 U	5.1 U	5.6 UJ	5.1 U	5.2 U	5.8 U	0.33 J	5.4 U	5.8 U
1,4-Dichlorobenzene	5.2 U	5.1 U	5.6 UJ	5.1 U	5.2 U	5.8 U	0.36 J	5.4 U	5.8 U
2-Butanone (MEK)	10 U	10 U	11 U	10 U	10 U	12 U	12 U	11 U	12 U
2-Hexanone	10 U	10 UJ	11 U	10 U	10 U	12 U	12 U	11 U	12 U
4-Methyl-2-pentanone	10 U	10 UJ	11 U	10 U	10 U	12 U	12 U	11 U	12 U
Acetone	9.2 J	3.9 J	11 UJ	10 UJ	10 UJ	12 UJ	12 UJ	11 UJ	17 UJ
Benzene	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Bromodichloromethane	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Bromoform	2.6 UJ	2.6 UJ	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Bromomethane	5.2 U	5.1 U	5.6 UJ	5.1 UJ	5.2 UJ	5.8 UJ	5.8 UJ	5.4 UJ	5.8 UJ
Carbon disulfide	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Carbon tetrachloride	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Chlorobenzene	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Chloroethane	5.2 U	5.1 UJ	5.6 U	5.1 U	5.2 U	5.8 U	5.8 U	5.4 U	5.8 U
Chloroform	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Chloromethane	5.2 U	5.1 U	5.6 UJ	5.1 UJ	5.2 UJ	5.8 UJ	5.8 UJ	5.4 UJ	5.8 UJ
cis-1,2-Dichloroethene	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
cis-1,3-Dichloropropene	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Dibromochloromethane	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Ethylbenzene	2.6 U	2.6 U	1.1 J	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Methylene chloride	9.6 U	5.1 UJ	5.6 UJ	5.1 UJ	5.2 UJ	5.8 UJ	5.8 UJ	5.4 UJ	5.8 UJ
Styrene	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Tetrachloroethene	2.6 U	2.9	56	2.5 U	2.6 U	2.9 U	2.9 U	39	2.9 U
Toluene	2.6 U	2.6 U	2.8 UJ	2.5 UJ	2.6 UJ	2.9 UJ	2.9 UJ	2.7 UJ	2.9 UJ
trans-1,2-Dichloroethene	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
trans-1,3-Dichloropropene	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U
Trichloroethene	2.6 U	2.6 U	2.8 U	2.5 U	2.6 U	2.9 U	2.9 U	0.42 J	2.9 U
Vinyl chloride	5.2 U	5.1 U	5.6 U	5.1 U	5.2 U	5.8 U	5.8 U	5.4 U	5.8 U
Xylenes (total)	2.6 U	2.6 U	8.0	2.5 U	2.6 U	2.9 U	2.9 U	2.7 U	2.9 U

Notes:
U - not detected
J - estimated value

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Volatile Organic Compound Data

Location	U-143		U-145		U-145		U-146		U-146		U-147		U-147	
Client Sample Description	U-143(3.5-4)		U-145(1-1.5)		U-145(18.5-19)		U-146(3.5-4)		U-146(7.5-8)		U-147(15.5-16)		U-147 (8-9)	
Depth	3.5-4 ft		1-1.5 ft		18.5-19 ft		3.5-4 ft		7.5-8 ft		15.5-16 ft		8-9 ft	
Date Sampled	12/09/02		12/10/02		12/10/02		12/10/02		12/10/02		12/10/02		12/10/02	
Property ID	NCDPW		GCDR		GCDR		GCDR		GCDR		GCDR		GCDR	
Units	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
1,1,2,2-Tetrachloroethane	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
1,1,2-Trichloroethane	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
1,1-Dichloroethane	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
1,1-Dichloroethene	0.37	J	0.58	J	0.44	J	0.39	J	0.44	J	0.37	J	0.37	J
1,2-Dichlorobenzene	5.1	U	5.7	U	5.3	U	5.2	U	5.1	U	5.2	U	5.1	U
1,2-Dichloroethane	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
1,2-Dichloropropane	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
1,3-Dichlorobenzene	5.1	U	5.7	U	5.3	U	5.2	U	5.1	U	5.2	U	5.1	U
1,4-Dichlorobenzene	5.1	U	0.32	J	5.3	U	5.2	U	5.1	U	5.2	U	5.1	U
2-Butanone (MEK)	10	U	11	U	11	U	10	U	10	U	10	U	10	U
2-Hexanone	10	U	11	U	11	U	10	U	10	U	10	U	10	U
4-Methyl-2-pentanone	10	U	11	U	11	U	10	U	10	U	10	U	10	U
Acetone	10	UJ	11	UJ	11	UJ	10	UJ	10	UJ	10	UJ	10	UJ
Benzene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Bromodichloromethane	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Bromoform	2.5	U	2.8	UJ	2.6	UJ	2.6	UJ	2.6	UJ	2.6	UJ	2.5	UJ
Bromomethane	5.1	UJ	5.7	UJ	5.3	UJ	5.2	UJ	5.1	UJ	5.2	UJ	5.1	UJ
Carbon disulfide	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Carbon tetrachloride	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Chlorobenzene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Chloroethane	5.1	U	5.7	UJ	5.3	U	5.2	U	5.1	U	5.2	U	5.1	U
Chloroform	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Chloromethane	5.1	UJ	5.7	UJ	5.3	UJ	5.2	UJ	5.1	UJ	5.2	UJ	5.1	UJ
cis-1,2-Dichloroethene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
cis-1,3-Dichloropropene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Dibromochloromethane	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Ethylbenzene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Methylene chloride	5.1	UJ	5.7	UJ	5.3	UJ	5.2	UJ	5.1	UJ	5.2	UJ	5.1	UJ
Styrene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Tetrachloroethene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Toluene	2.5	UJ	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
trans-1,2-Dichloroethene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
trans-1,3-Dichloropropene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Trichloroethene	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U
Vinyl chloride	5.1	U	5.7	U	5.3	U	5.2	U	5.1	U	5.2	U	5.1	U
Xylenes (total)	2.5	U	2.8	U	2.6	U	2.6	U	2.6	U	2.6	U	2.5	U

Notes:
U - not detected
J - estimated value

Table 8
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Metals Data

Location	U-001	U-015	U-016A	U-017	U-018	U-019	U-020	U-021
Client Sample Description	U-1 (5)	U-15 (14-16)	U-16A (15.5)	U-17(16)	U-18(19-19.5)	U-19(18)	U-20 (19.5)	U-21 (17-17.5)
depth	5-5 ft	14-16 ft	15.5-15.5 ft	16-16 ft	19-19.5 ft	18-18 ft	19.5-19.5 ft	17-17.5 ft
Date Sampled	10/10/02	10/08/02	10/08/02	10/18/02	10/17/02	10/18/02	10/08/02	10/19/02
Property ID	70 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	4450	1940	6140	1120	1680	1310	817	866 J
Antimony	6.4 U	0.35 J	6.2 U	6.2 U	6.2 U	6.1 U	6.2 U	0.28 J
Arsenic	4.7	34.3	0.86 J	0.15 J	0.12 J	0.79 J	0.53 J	0.21 J
Barium	13.9 J	2.6 J	6.5 J	6.9 J	3.2 J	6.3 J	3.6 J	6.1 J
Beryllium	0.47 J	0.055 J	0.14 J	0.072 J	0.11 J	0.17 J	0.11 J	0.10 J
Cadmium	0.54 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U
Calcium	380 J	70.6 J	112 J	122 J	108 J	78.5 J	58.0 J	84.1 J
Chromium	11.2	8.0	7.5	10.7	4.2	4.0	12.1	4.6
Cobalt	5.2 J	0.63 J	1.6 J	0.51 J	1.1 J	1.4 J	1.9 J	0.97 J
Copper	7.5	8.7	18.9	2.5 J	7.6	2.5 J	4.0	2.5 J
Iron	16900	9350	5310	3660	3340	5700	4280	3040
Lead	2.4 J	1.2	8.8	1.9	9.4	1.2	1.1	0.98
Magnesium	522 J	69.1 J	339 J	240 J	341 J	157 J	144 J	156 J
Manganese	144 J	13.4	58.3	24.2	52.3	68.7	92.6	52.0 J
Mercury	0.023 J	0.034 UJ	0.037 J	0.034 U	0.051	0.034 U	0.034 UJ	0.035 U
Nickel	11.5	313	144	213	89.2	5.1	62.3	10.9
Potassium	212 J	512 U	353 J	105 J	135 J	156 J	516 U	205 J
Selenium	0.62	0.33 J	0.32 J	0.24 J	0.51 U	0.51 U	0.52 U	0.52 U
Silver	1.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Sodium	63.1 J	23.0 J	138 J	27.4 J	34.4 J	39.4 J	516 U	517 U
Thallium	0.68 J	0.37 J	1 U	0.36 J	0.31 J	0.58 J	1 U	0.84 J
Vanadium	21.2	2.6 J	4.4 J	3.0 J	2.4 J	3.6 J	2.6 J	2.5 J
Zinc	9.9	10.6	16.9	4.6	8.6	6.1	4.3	4.6

Notes:
U - not detected
J - estimated value

Table 8
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Metals Data

Location	U-022		U-031		U-032		U-033		U-035B		U-036		U-036		U-037	
Client Sample Description	U-22 (7.5)		U-31 (11.5)		U-32 (11.5-12)		U-33 (12)		U-35B (12)		PMC-3		U-36 (2-4)		U-37(16-16.5)	
depth	7.5-7.5 ft		11.5-11.5 ft		11.5-12 ft		12-12 ft		12-12 ft		2-4 ft		2-4 ft		16-16.5 ft	
Date Sampled	10/08/02		10/08/02		10/9/02		10/9/02		10/09/02		10/11/02		10/11/02		10/15/02	
Property ID	100 Property		140 Property		140 Property		140 Property		140 Property		140 Property		140 Property		140 Property	
Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	2080		4810		1760		1830		1100		1750		1700		1210	
Antimony	6.2	U	6.2	U	6.1	U	6.1	U	6.2	U	0.32	J	6.1	U	6.6	U
Arsenic	0.54	J	2.8		0.50	J	0.46	J	0.43	J	1.7		1.2		1.8	
Barium	6.7	J	59.8		10.9	J	9.9	J	5.9	J	7.1	J	5.4	J	20.5	J
Beryllium	0.15	J	0.26	J	0.13	J	0.19	J	0.14	J	0.20	J	0.14	J	0.36	J
Cadmium	0.51	U	0.52	U	0.51	U	0.51	U	0.52	U	0.51	U	0.5	U	0.55	U
Calcium	217	J	6050		59.8	J	65.6	J	31.5	J	262	J	171	J	48.5	J
Chromium	3.4		15.0		2.4		2.8		4.0		9.6		5.6		6.0	
Cobalt	1.4	J	2.9	J	0.93	J	2.2	J	0.63	J	2.8	J	1.7	J	1.9	J
Copper	2.9		25.4		2.8		2.8		2.3	J	3.5		2.6		5.5	
Iron	4510		8200		4360		5080		3500		7430		4210		15000	
Lead	1.1		32.4		1.9		1.8		0.90		2.1		1.5		2.9	
Magnesium	376	J	1010		496	J	357	J	157	J	278	J	285	J	148	J
Manganese	52.2		102		35.5	J	120	J	35.6		116	J	95.4	J	215	J
Mercury	0.034	UJ	0.16	J	0.034	UJ	0.034	UJ	0.035	UJ	0.019	J	0.034	UJ	0.037	U
Nickel	10.3		68.5		1.8	J	2.6	J	1.0	J	11.2	J	5.5	J	1.8	J
Potassium	223	J	463	J	525		102	J	206	J	227	J	217	J	289	J
Selenium	0.33	J	0.37	J	0.34	J	0.51	U	0.34	J	0.35	J	0.24	J	0.49	J
Silver	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.1	U
Sodium	33.0	J	79.3	J	26.6	J	505	U	34.6	J	24.9	J	19.0	J	551	U
Thallium	1	U	1	U	1	U	0.5	J	1	U	1	U	1	U	0.76	J
Vanadium	2.9	J	10.8		3.5	J	4.1	J	2.8	J	6.1		4.1	J	9.7	
Zinc	8.4		59.9		12.7		7.7		10.7		7.5		7.4		38.2	

Notes:
U - not detected
J - estimated value

Table 8
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Metals Data

Location	U-038		U-046		U-048C		U-075E		4		U-108	
Client Sample Description	U-38 (19)		U-46(19-19.5)		U-48C (5.5-6)		U-75E (11-11.5)		U-95 (17-17.5)		U-108 (18-18.5)	
depth	19-19 ft		19-19.5 ft		5.5-6 ft		11-11.5 ft		17-17.5 ft		18-18.5 ft	
Date Sampled	10/08/02		10/15/02		10/10/02		10/14/02		10/20/02		10/20/02	
Property ID	140 Property		140 Property		70 Property		100 Property		100 Property		100 Property	
Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	745		801		4800		8290	J	1240	J	2170	J
Antimony	6.1	U	6.1	U	0.34	J	0.57	J	6.2	U	0.24	J
Arsenic	0.41	J	1.2		2		3.3		1.6		2.0	
Barium	5.0	J	5.9	J	18.5	J	33.0		5.9	J	6.0	J
Beryllium	0.087	J	0.099	J	0.3	J	0.36	J	0.22	J	0.28	J
Cadmium	0.51	U	0.51	U	0.55	U	0.57	U	0.51	U	0.51	U
Calcium	54.1	J	30.7	J	143	J	2880		59.5	J	88.0	J
Chromium	3.7		4.6		6.2		11.9		3.0		8.8	
Cobalt	0.56	J	0.68	J	3.1	J	3.7	J	1.1	J	1.2	J
Copper	4.0		2.1	J	4.6		130		3.1		11.2	
Iron	3070		5670		7140		11200		6860		6530	
Lead	0.72		0.84		3		142		1.8		2.1	
Magnesium	153	J	187	J	862		1030		217	J	1220	
Manganese	24.1		53.1		107	J	296	J	61.8	J	41.1	J
Mercury	0.034	UJ	0.034	U	0.023	J	0.20		0.034	U	0.034	U
Nickel	2.0	J	1.3	J	5.1		7.0		6.5		6.8	
Potassium	510	U	263	J	390	J	640		128	J	187	J
Selenium	0.51	U	0.34	J	0.3	J	0.43	J	0.30	J	0.39	J
Silver	1	U	1	U	1.1	U	1.1	U	1	U	1	U
Sodium	510	U	512	U	27.9	J	105	J	18.2	J	21.6	J
Thallium	1	U	1	U	0.31	J	1.4		1.3		1.1	
Vanadium	2.4	J	4.3	J	10.5		15.8		3.8	J	10.7	
Zinc	4.5		10.8		11.8		58.8		9.4		16.4	

Notes:
U - not detected
J - estimated value

Table 9
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Nickel Data

Location	U-004	U-005B	U-006	U-007	U-007	U-008	U-009	U-018	U-030
Client Sample Description	U-4 (3.5)	U-5B (8)	U-6 (15)	U-7 (2)	U-7 (7.5)	U-8 (4)	U-9 (2)	U-18(16)	U-30 (1.5-2)
Depth	3.5-3.5 ft	8-8 ft	15-15 ft	2-2 ft	7.5-7.5 ft	4-4 ft	2-2 ft	16-16 ft	1.5-2 ft
Date Sampled	10/10/02	10/10/02	10/10/02	10/11/02	10/11/02	10/12/02	10/11/02	10/17/02	10/12/02
Property ID	70 Property	70 Property	70 Property	70 Property	70 Property	70 Property	70 Property	100 Property	140 Property
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Nickel	15.6	20.9	2.3 J	56.8	5.9	8.9	17.0	67.1	423

Notes:
U - not detected
J - estimated value

Table 9
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Nickel Data

Location	U-036	U-043	U-044	U-047	U-047	U-054	U-054	U-055	U-055
Client Sample Description	U-36 (10-12)	19)	17.5)	PMC-10	16)	19.5)	U-54(5-5.5)	U-55 (17.5-18.5)	U-55 (7.5-8)
Depth	10-12 ft	18.5-19 ft	17-17.5 ft	15.5-16 ft	15.5-16 ft	19-19.5 ft	5-5.5 ft	17.5-18.5 ft	7.5-8 ft
Date Sampled	10/11/02	10/29/02	10/29/02	10/17/02	10/17/02	10/29/02	10/29/02	10/29/02	10/29/02
Property ID	140 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property	100 Property
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Nickel	7.3	1.4 J	4.1 U	10.4	11.6	4.1 U	2.5 J	1.7 J	7.2

Notes:
U - not detected
J - estimated value

Table 9
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Nickel Data

Location	U-056	U-056	U-057	U-057	U-059	U-061	U-082	U-087	U-092
Client Sample Description	U-56(19-19.5)	U-56(4.5-5)	U-57(18.5-19)	U-57(4.5-5)	U-59 (2.5)	U-61 (2)	U-82(11-11.3)	U-87(5.8-6)	U-92 (16.5-17)
Depth	19-19.5 ft	4.5-5 ft	18.5-19 ft	4.5-5 ft	2.5-2.5 ft	2-2 ft	11-11.3 ft	5.8-6 ft	16.5-17 ft
Date Sampled	10/17/02	10/17/02	10/17/02	10/17/02	10/11/02	10/11/02	10/18/02	10/18/02	10/19/02
Property ID	70 Property	70 Property	70 Property	70 Property	70 Property	70 Property	100 Property	100 Property	100 Property
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Nickel	1.3 J	3.1 J	0.86 J	4.2	107	16.4	20.3	7.6	5.9

Notes:
U - not detected
J - estimated value

Table 9
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Nickel Data

Location	U-093	U-097	U-098	U-102	U-105	U-106	U-109	U-110	U-111
Client Sample Description	U-93 (17-17.5)	U-97(8.5)	U-98 (2-2.5)	U-102 (7-7.5)	U-105 (5.5)	U-106(7-7.5)	U-109(6.5-7)	U-110(11)	U-111DUP(11.5)
Depth	17-17.5 ft	8.5-8.5 ft	2-2.5 ft	7-7.5 ft	5.5-5.5 ft	7-7.5 ft	6.5-7 ft	11-11 ft	11.5-11.5 ft
Date Sampled	10/19/02	10/22/02	10/21/02	10/19/02	10/21/02	10/22/02	10/22/02	10/22/02	10/22/02
Property ID	100 Property	70 Property	70 Property	100 Property	70 Property	70 Property	100 Property	100 Property	100 Property
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Nickel	2.3 J	2.8 J	10.4	3.4 J	5.0	3.5 J	3.7 J	8.6	4.8

Notes:
U - not detected
J - estimated value

Table 9
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Nickel Data

Location	U-112		U-113		U-115		U-121		U-136		U-139		U-140B		U-144	
Client Sample Description	U-112 (5.5)		U-113(7.5)		U-115(17)		U-121(19)		U-136(4-4.5)		U-139(6.5-7)		U-140B(7-7.5)		U-144(2-2.5)	
Depth	5.5-5.5 ft		7.5-7.5 ft		17-17 ft		19-19 ft		4-4.5 ft		6.5-7 ft		7-7.5 ft		2-2.5 ft	
Date Sampled	10/21/02		10/21/02		10/23/02		10/22/02		12/09/02		12/09/02		12/09/02		12/09/02	
Property ID	70 Property		70 Property		100 Property		100 Property		100 Property		100 Property		140 Property		NCDPW	
Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Nickel	5.3		11.2		4.1	U	1.2	J	10.5		2.0	J	2.8	J	3.9	J

Notes:
U - not detected
J - estimated value

FIGURES

SCALE: 1:24 000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

NORTH

MAP REFERENCE:

PORTION OF U.S.G.S. QUADRANGLE MAP
7 ½ MINUTE SERIES (TOPOGRAPHIC)
HICKSVILLE, NEW YORK 1967
PHOTOREVISED 1979

QUADRANGLE LOCATION

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 1
SITE LOCATION MAP

DATE: MAY 11, 2003	URS
JOB NO.: 27010-039-007	
DRAWN BY: MAR / CHK'D BY: CS	
SCALE: AS SHOWN	

1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008
PHONE: 847.228.0707
FAX: 847.228.1115

0 40 80 160

SCALE IN FEET

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

LEGEND:

= CURRENT BUILDINGS

SB-018 ▲ = SOIL BORING LOCATION

U-051 ▫ = SOIL BORING LOCATION

HISTORIC STRUCTURES

LP = LEACHING POOL	CT = CISTERN	HY = HYDRANT
DW = DRY WELL	ST = SEPTIC TANKS	CP = CESSPOOL
DR = DRAIN	IL = INLET	WM = WATER METER PIT

SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

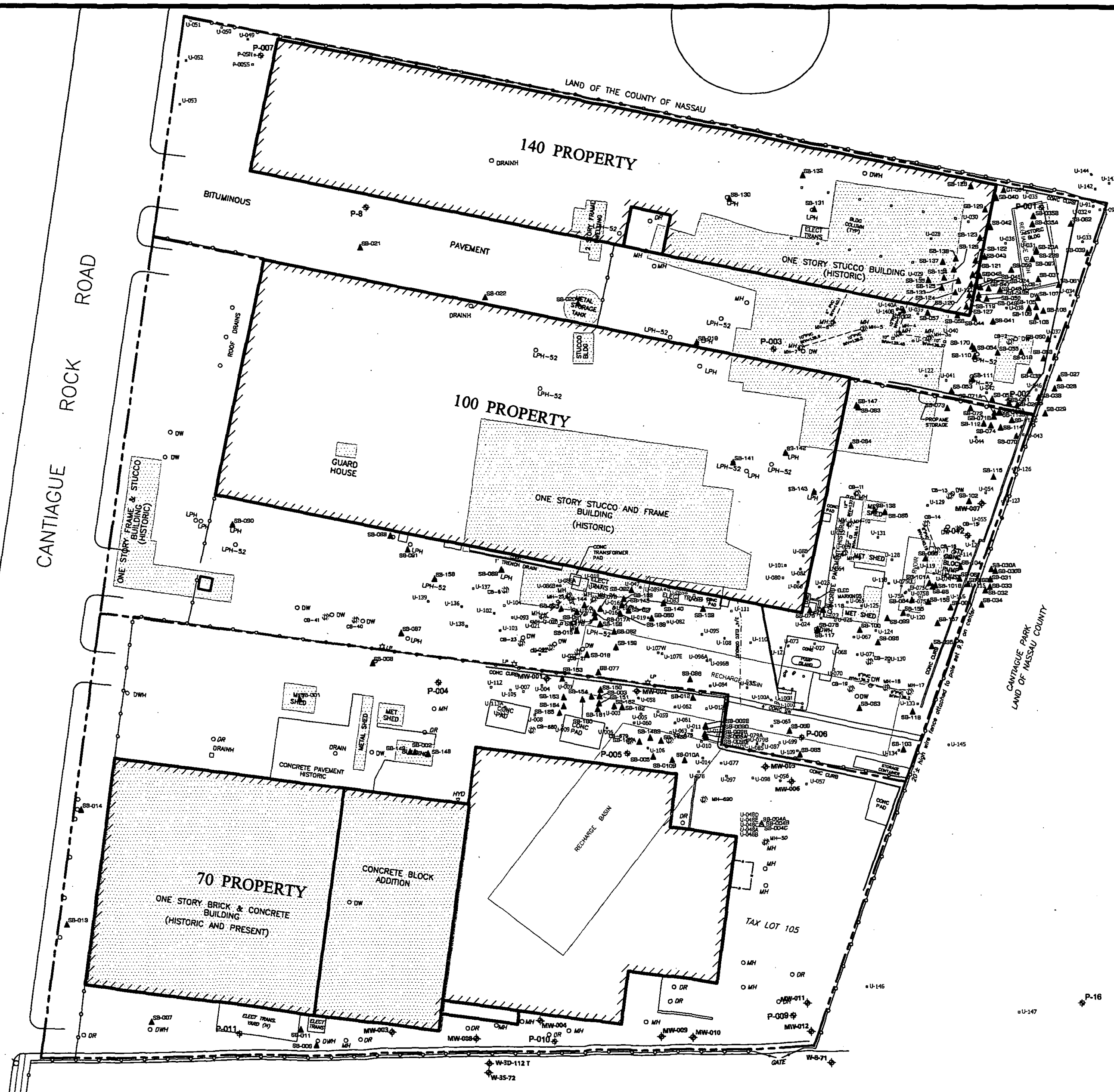
GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 2
CURRENT SITE MAP SHOWING BORING LOCATIONS

DATE:	MARCH 11, 2003
JOB NO.:	27010-039-007
DRAWN BY: MAR	CHK'D BY: CS
SCALE:	AS SHOWN

URS

1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115



0 40 80 160

SCALE IN FEET

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

LEGEND:

- = CURRENT BUILDINGS
- = FORMER BUILDINGS
- SB-018 = SOIL BORING LOCATION
- MW-011 = MONITORING WELL LOCATION
- U-051 = SOIL BORING LOCATION
- P-008 = PROFILE LOCATION

HISTORIC STRUCTURES

LP = LEACHING POOL	CT = CISTERN	HY = HYDRANT
DW = DRY WELL	ST = SEPTIC TANKS	CP = CESSPOOL
DR = DRAIN	IL = INLET	WM = WATER METER PIT

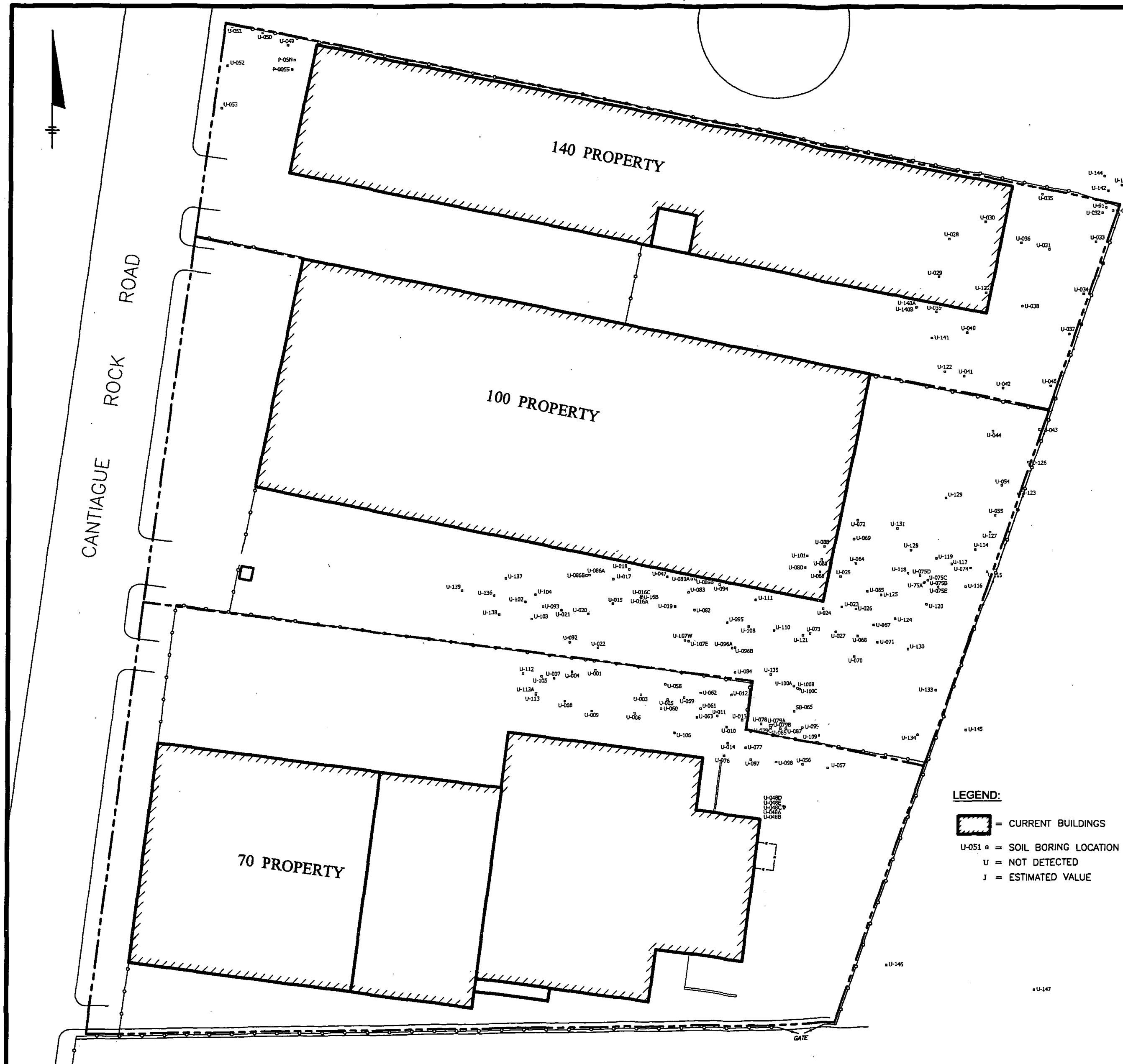
SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 3
CURRENT SITE CONDITIONS AND SAMPLING LOCATIONS WITH HISTORIC OVERLAYS

DATE:	MARCH 11, 2003
JOB NO.:	27010-039-007
DRAWN BY: MAR	CHK'D BY: CS
SCALE:	AS SHOWN

URS
1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115



Boring ID	Depth	Tetrachloroethene	Trichloroethene	Boring ID	Depth	Tetrachloroethene	Trichloroethene
U-001	4-4	2.6 U	2.6 U	U-086A	15.5-16	2.6 U	2.6 U
U-001	4-4	2.6 U	2.6 U	U-087	5.5-8	2.5 U	2.5 U
U-002	32-34	2.6 U	2.6 U	U-088	4-4.5	8.2	2.7 U
U-003	4-4	2.5 U	2.5 U	U-090	2-2.3	11	3.0 U
U-004	7.5-7.5	2.5 U	2.5 U	U-091	2-2.3	2.5 J	2.6 U
U-005B	8-8	2.6 U	2.6 U	U-092	19-19.5	2.6 U	2.6 U
U-006	15-15	2.6 U	2.6 U	U-093	19.5-20	2.6 U	2.6 U
U-007	2-2.5	14	3.1 U	U-094	10-10	12000	93
U-008	15.5-16	2.7 U	2.7 U	U-094	10-10	20000	75
U-008	4-4	2.5 U	2.5 U	U-095	19.5-20	2.6 U	2.6 U
U-009	16-16	2.5 U	2.5 U	U-096B	14-15	2.6 U	2.6 U
U-011	4-4	2.5 U	2.5 U	U-096B	19.5-20	2.6 U	2.6 U
U-012	7.5-8	2.5 U	2.5 U	U-096B	14-15	2.6 U	2.6 U
U-013	8.5-9	2.7 U	2.7 U	U-097	8-8	2.6 U	2.6 U
U-014	2-2.5	2.5 U	2.5 U	U-098	12-12	2.6 U	2.6 U
U-015	38-40	2.6 U	2.6 U	U-099	12-12.5	2.5 U	2.5 U
U-016A	15.5-18.8	2.6 U	2.6 U	U-099	12-12.5	2.6 U	2.6 U
U-017	19-19.5	2.6 U	2.6 U	U-100C	19.5-20	2.6 U	2.6 U
U-018	19-19.5	2.6 U	2.6 U	U-100C	13.5-14	2.6 U	2.6 U
U-019	18.5-19	2.6 U	2.6 U	U-101	11.5-12	2.5 U	2.5 U
U-020	19.5-19.8	2.6 U	2.6 U	U-101	5.5-6	38	2.6 U
U-021	16-16.5	2.6 U	2.6 U	U-103	7.5-8	2.8 U	2.8 U
U-022	7.5-7.5	2.6 U	2.6 U	U-105	5-5	2.6 U	2.6 U
U-023	11-11	1.4 J	2.7 U	U-106	7.5-8	2.6 U	2.6 U
U-023	2.5-2.5	41	0.80 J	U-107B	19-19	2.6 U	2.6 U
U-024	11.5-12	2.7 U	2.7 U	U-108	15-15	2.6 U	2.6 U
U-024	5.5-6	3.0	2.6 U	U-108	18-18	2.6 U	2.6 U
U-025	10.5-10.5	3.4	3.0 U	U-109	6-7	1.3 J	2.9 U
U-025	7.5-7.5	47	2.5 U	U-110	12-12	2.8 U	2.5 U
U-026	3.5-3.5	190	2.4 J	U-110	2.5-3	71000	85
U-026	3.5-3.5	330	5.6	U-111	12-12	2.6 U	2.6 U
U-027	6-6.5	2.6 U	2.6 U	U-112	5-5	2.6 U	2.6 U
U-028	7-7.5	2.5 U	2.5 U	U-113	7.5-8	1.3 J	3.1 U
U-029	4-4	2.5 U	2.5 U	U-114	15-15.5	540000	100
U-029	7-7	2.5 U	2.5 U	U-114	18.5-19	500000	15000 U
U-030	3-3	12	2.8 U	U-115	19.5-19.5	2.6 U	2.6 U
U-031	3.8-4	44	0.63 J	U-116	18.5-19	2.6 U	2.6 U
U-032	3.5-3.5	2.8 U	2.8 U	U-116	39-39.5	9.2	2.6 U
U-033	4-4	2.5 U	2.5 U	U-117	28-28	44000	1300 U
U-034	18.5-19	2.6 U	2.6 U	U-117	39-39	440	13 U
U-035B	3.5-3.5	2.6 U	2.6 U	U-118	21-21.5	2.5 U	2.5 U
U-036	12-14	2.5 U	2.5 U	U-118	39.5-40	2.3 J	2.6 U
U-037	18.5-19	2.5 U	2.5 U	U-119	-	2.6 U	2.6 U
U-037	18.5-19	2.8 U	2.8 U	U-119	18.5-19	1.4 J	2.6 UJ
U-038	2.8-3	1.2 J	2.5 U	U-120	-	71	0.27 J
U-039	4-4	2.5 U	2.5 U	U-120	18.5-19	3.0 U	3.0 U
U-040	11.5-12	2.5 U	2.5 U	U-120	39-39.5	2.6 U	2.6 U
U-041	3.5-3.8	72	1.5 J	U-120	8.5-9	120	1.1 J
U-042	18-20	2.6 U	2.6 U	U-121	20-20	1.9 J	2.6 U
U-043	18.5-19	2.6 U	2.6 U	U-122	18.5-19	1.2 J	2.5 U
U-044	17-17.5	2.6 U	2.6 U	U-123	10.5-11	2.6 U	2.6 U
U-046	19-19.5	2.6 U	2.6 U	U-124	14-14.5	1.2 J	2.6 U
U-047	16-16	2.7 U	2.7 U	U-124	33-34	2.7 U	2.7 U
U-048B	0.5-1	2.6 U	2.6 U	U-124	38.5-40	2.6 U	2.6 UJ
U-049	18.5-19	2.6 U	2.6 U	U-125	18.5-19	2.7 U	2.7 U
U-050	19-19.5	2.6 U	2.6 U	U-125	5-6	600	1.4 J
U-051	18.5-19	2.6 U	2.6 U	U-126	10.5-11	2.5 U	2.5 U
U-052	18.5-19	2.6 U	2.6 U	U-127	19.5-20	2.6 U	2.6 UJ
U-053	18.5-19	2.6 U	2.6 U	U-128	19-19.5	2.6 U	2.6 UJ
U-054	3.5-4	100	0.93 J	U-128	39.5-40	2.7 U	2.7 UJ
U-055	19-19.5	6.1	2.6 U	U-128	6-6.5	8100	620 U
U-056	18.5-19	2.5 U	2.5 U	U-129	19.5-20	2.7 U	1.3 J
U-057	3.5-4	7.0	3.0 U	U-129	39.5-40	2.6 U	2.6 U
U-057	13.5-14	2.6 U	2.6 U	U-130	21-21.5	2.6 U	2.6 U
U-058	4.5-4.5	3.0 U	3.0 U	U-130	39.5-40	2.6 U	2.6 U
U-059	3.5-3.5	2.7 U	2.7 U	U-131	19.5-20	2.6 U	2.6 U
U-060	7.5-8	2.6 U	2.6 U	U-131	39.5-40	2.6 U	2.6 U
U-061	7.5-7.5	2.6 U	2.6 U	U-132	11-12	17	2.6 U
U-062	7-7	2.5 U	2.5 U	U-132	11-12	6.4	2.6 U
U-063	8-8	3.0 U	3.0 U	U-132	19.5-20	2.6 U	2.6 U
U-064	11.5-12	2.5 U	2.5 U	U-133	19.5-20	2.6 U	2.6 U
U-064	5.5-6	5000	130 U	U-133	39.5-40	2.6 U	2.6 U
U-065B	1.5-2	910	2.2 J	U-134	19.5-20	2.6 U	2.6 U
U-065B	6-6	2.7 U	2.7 U	U-134	39.5-40	2.6 U	2.6 U
U-066	3-3	7600 J	5.5	U-135	19.5-20	2.9	2.6 U
U-068	0.5-1	7.2	0.32 J	U-136	4-4.5	56	2.8 U
U-068	4-4	5.3	2.7 U	U-137	5-6	2.5 U	2.5 U
U-069	0.5-0.5	27	0.73 J	U-138	5.5-6	2.6 U	2.6 U
U-070	0.5-1	2.6 U	2.6 U	U-139	6-6.5	2.9 U	2.9 U
U-071	0.5-1	21	0.54 J	U-140B	3-3.5	2.9 U	2.9 U
U-072	7.5-8	2.6 U	2.6 U	U-141	1.5-2	39	0.42 J
U-073	2.5-2.8	2.6 U	2.6 U	U-142	2.5-3	2.9 U	2.9 U
U-074	4-4	72000	2600 U	U-143	3.5-4	2.5 U	2.5 U
U-074B	20-20	140000	28	U-145	1-1.5	2.8 U	2.8 U
U-075A	4-4.3	4200	28	U-145	18.5-19	2.6 U	2.6 U
U-075A	4-4.3	1500	16	U-146	3.5-4	2.6 U	2.6 U
U-075B	6-6.3	600	10	U-146	7.5-8	2.6 U	2.6 U
U-076	6.5-7	2.5 U	2.5 U	U-147	15.5-16	2.6 U	2.6 U
U-081	7-7.3	2.7 U	2.7 U	U-147	8-9	2.5 U	2.5 U
U-084	7.5-7.5	2.6 U	2.6 U				

Notes:
Depth is measured in feet
Concentrations are measured in ug/Kg

U - not detected
J - estimated value

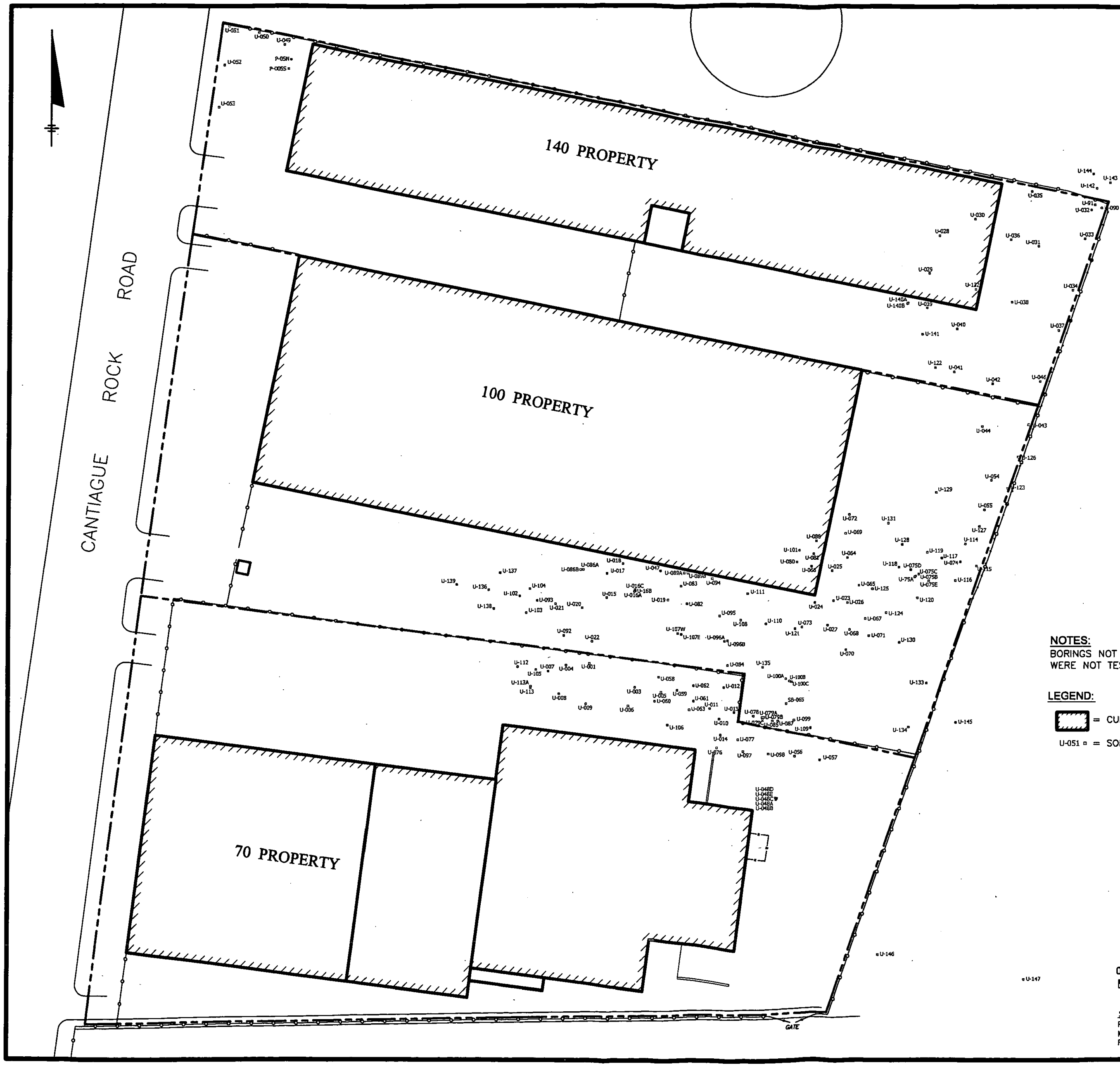
SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 4
VOLATILE ORGANIC COMPOUNDS

DATE: MARCH 11, 2003
JOB NO.: 27010-039-007
DRAWN BY: MAR | CHK'D BY: CS
SCALE: AS SHOWN

URS
1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115



Location	Depth	Nickel
U-004	3.5-3.5	15.6
U-005B	8-8	20.9
U-006	15-15	2.3 J
U-007	2-2	56.8
U-007	7.5-7.5	5.9
U-008	4-4	8.9
U-009	2-2	17.0
U-018	16-16	67.1
U-030	1.5-2	423
U-036	10-12	7.3
U-043	18.5-19	1.4 J
U-044	17-17.5	4.1 U
U-047	15.5-16	10.4
U-047	15.5-16	11.6
U-054	19-19.5	4.1 U
U-054	5-5.5	2.5 J
U-055	17.5-18.5	1.7 J
U-055	7.5-8	7.2
U-056	19-19.5	1.3 J
U-056	4.5-5	3.1 J
U-057	18.5-19	0.86 J
U-057	4.5-5	4.2
U-059	2.5-2.5	107
U-061	2-2	16.4
U-082	11-11.3	20.3
U-087	5.8-6	7.6
U-092	16.5-17	5.9
U-093	17-17.5	2.3 J
U-097	8.5-8.5	2.8 J
U-098	2-2.5	10.4
U-102	7-7.5	3.4 J
U-105	5.5-5.5	5.0
U-106	7-7.5	3.5 J
U-109	6.5-7	3.7 J
U-110	11-11	8.6
U-111	11.5-11.5	4.8
U-112	5.5-5.5	5.3
U-113	7.5-7.5	11.2
U-115	17-17	4.1 U
U-121	19-19	1.2 J
U-136	4-4.5	10.5
U-139	6.5-7	2.0 J
U-140B	7-7.5	2.8 J
U-144	2-2.5	3.9 J

NOTES:
BORINGS NOT LISTED IN THE TABLE WERE NOT TESTED FOR NICKEL

LEGEND:
= CURRENT BUILDINGS
U-051 = SOIL BORING LOCATION

NOTES:
DEPTH IS MEASURED IN FEET
CONCENTRATIONS ARE MEASURED IN mg/Kg
U = NOT DETECTED
J = ESTIMATED VALUE

0 40 80 160
SCALE IN FEET

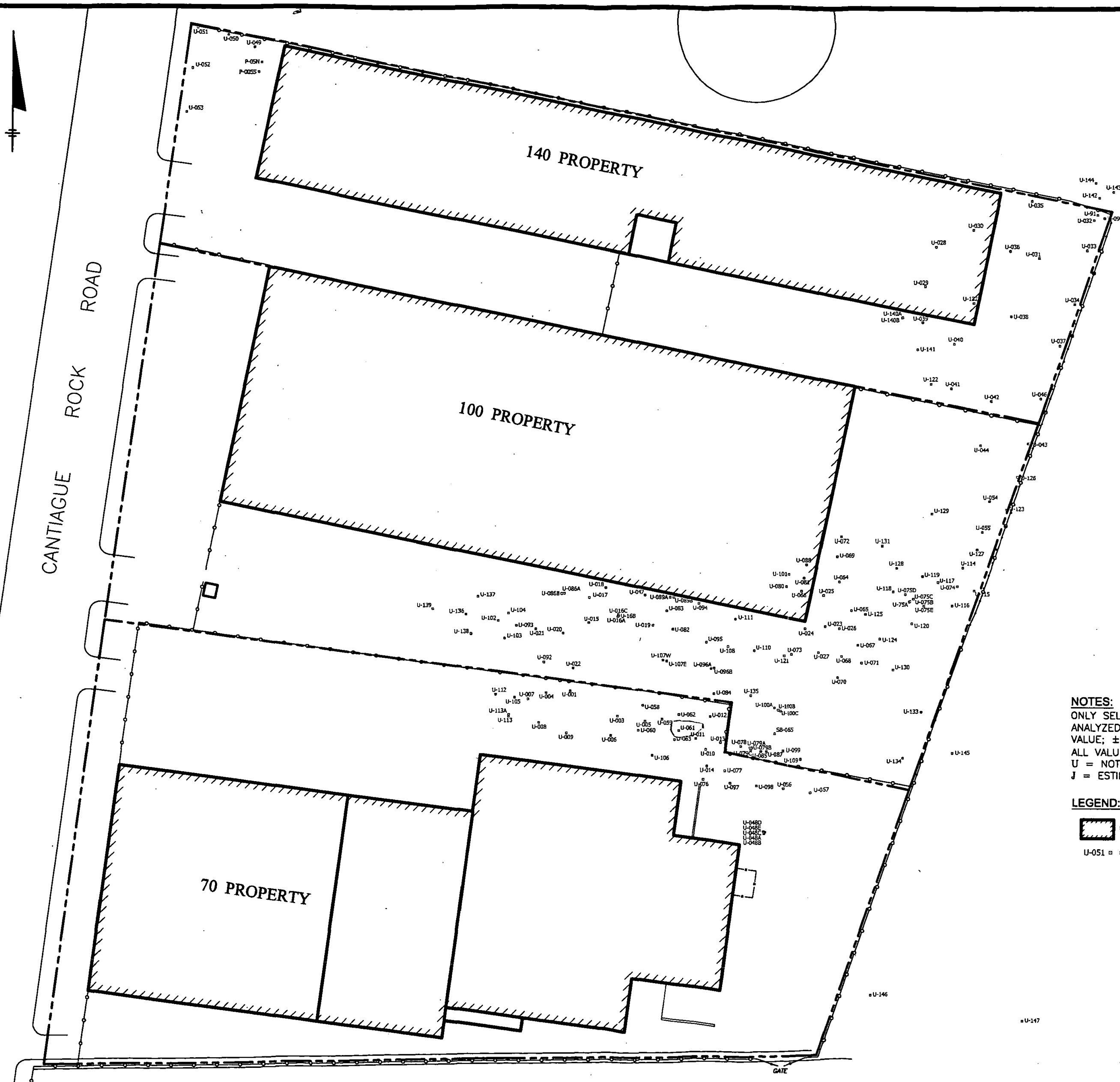
SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 5
SOIL NICKEL DATA

DATE: MARCH 11, 2003
JOB NO.: 27010-039-007
DRAWN BY: MAR
CHK'D BY: CS
SCALE: AS SHOWN

URS
1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115



Location	Depth	Thorium 232	+/-	Q	Uranium 238	+/-	Q
U-005A	1-1.5	6.4	1.3		153	33	J
U-012	15-16	0.202	0.053		2.13	0.45	J
U-012	15-16	0.145	0.046		1.86	0.39	J
U-012	2-3	4.78	0.97		83	18	J
U-013	1.5-2.5	0.89	0.20		167	38	J
U-017	7-8	0.88	0.32	J	115	22	J
U-019	2-3.5	9.4	2.0	J	81	15	J
U-019	2-3.5	11.7	2.5	J	95	18	J
U-020	2.5-3	2.32	0.48		68	14	J
U-032	2.5-3	3.47	0.71		71	15	J
U-034	3-3.5	0.65	0.15		262	50	J
U-036	14-16	0.48	0.21	J	20.1	4.6	J
U-039	1.5-1.5	1.28	0.27		58	12	J
U-042	1-2	21.8	4.4	J	112	22	J
U-042	14-18	0.14	0.12	UJ	46.4	9.2	J
U-042	14-18	0.139	0.092	J	43.4	8.5	J
U-044	19-20	0.25	0.18	J	1.79	0.59	J
U-044	3-4	1.50	0.49	J	35.8	7.0	J
U-046	2.5-3	4.89	0.99		720	140	J
U-048A	1.5-2.5	0.65	0.15		10.8	2.2	
U-048A	0.5-1	0.71	0.16		14.2	2.8	
U-049	19-20	0.08	0.11	UJ	0.27	0.20	J
U-049	2-3	0.59	0.28	J	0.81	0.38	J
U-053	19.5-20	0.12	0.12	UJ	0.28	0.22	J
U-053	2.5-3.5	1.00	0.36	J	0.58	0.33	J
U-056	5.5-6	0.24	0.12		0.59	0.14	
U-056	10.5-11.5	0.31	0.19	J	0.35	0.13	J
U-056	5.5-6	0.16	0.14	J	0.43	0.14	J
U-059	1.5-2.5	6.0	1.2		18.8	3.7	
U-059	0.5-1.5	7.9	1.6		163	35	J
U-061	0.5-1.5	4.94	0.97		254	51	J
U-067	2-2.5	0.94	0.20		630	120	J
U-067	7.5-8	0.48	0.11		4.64	0.92	
U-075A	7-7.5	50.0	9.4		75	15	J
U-076	1-2	0.80	0.18		4.16	0.87	
U-082	1.5-2	1.38	0.48	J	52.5	9.8	J
U-083	2.5-3	1.64	0.52	J	90	17	J
U-084	2.5-3	2.58	0.51		33.8	7.2	
U-087	2.5-3	1.58	0.49	J	230	44	J
U-087	6.5-8	0.33	0.18	J	0.78	0.21	J
U-089	2-3	0.95	0.27	J	15.3	2.9	J
U-090	1-2	1.26	0.41	J	3.40	0.71	J
U-091	2.5-3	1.94	0.39		119	27	J
U-092	2-2.5	2.67	0.52		17.0	3.7	
U-093	1-2.5	0.90	0.26	J	75	14	J
U-094	11.5-12	0.27	0.18	J	0.26	0.16	J
U-094	11.5-12	0.26	0.18	J	0.21	0.13	J
U-095	2.5-3.5	1.22	0.38	J	124	24	J
U-096B	1.5-2.5	2.20	0.55	J	26.7	5.3	J
U-096B	1.5-2.5	2.38	0.56	J	31.0	5.8	J
U-097	2.5-3.5	1.10	0.26	J	4.3	1.1	J
U-099	11-11.5	1.00	0.31	J	94	18	J
U-100C	3-3.5	1.60	0.32		28.2	5.9	
U-102	1.5-3	1.24	0.37	J	12.4	2.4	J
U-105	1.5-2	1.16	0.36	J	11.7	2.4	J
U-105	1-1.5	0.97	0.33	J	75	15	J
U-107B	3.5-4	1.21	0.25		22.4	4.2	
U-109	2-2.5	1.19	0.45	J	37.2	7.5	J
U-110	10-12.5	0.54	0.14	J	0.65	0.27	J
U-110	1-1.5	3.89	0.77	J	77	15	J
U-112	1.5-2	1.05	0.32	J	18.0	3.6	J
U-112	2-2.5	1.41	0.39	J	31.4	5.9	J
U-113B	1-2	1.05	0.25	J	26.6	5.5	J
U-114	2-4	3.88	0.99	J	251	49	J
U-114	1.5-4	4.5	1.1	J	243	47	J
U-114	19-20	0.20	0.18	UJ	6.8	1.5	J
U-114	6-7	11.6	2.6	J	540	110	J
U-115	18.5-19.5	0.129	0.053	J	0.30	0.18	J
U-115	2-3	1.91	0.40	J	121	24	J
U-115	.18.5-19.5	0.154	0.065	J	0.32	0.20	J
U-117	1-2.5	1.76	0.38	J	102	20	J
U-117	39.5-40	0.38	0.18	J	0.80	0.29	J
U-131	0.5-2	1.19	0.38	J	13.8	3.3	J
U-131	0.5-2	1.19	0.37	J	15.2	3.6	J
U-132	12-13	1.34	0.41	J	258	54	J
U-132	13-13.5	0.92	0.29	J	680	150	J
U-132	14.5-16	0.054	0.084	UJ	17.8	4.0	J
U-132	23-24	0.31	0.15	J	16.4	3.6	J
U-133	2.5-3.5	1.41	0.40	J	6.7	1.8	J
U-136	2-3	1.0	0.49	J	36.8	7.0	J
U-140B	2-3	1.41	0.65	J	0.93	0.27	J
U-140B	7.5-8	0.30	0.26	J	0.30	0.13	J
U-142	1.5-2.5	1.46	0.66	J	0.98	0.28	J
U-142	3-4	0.60	0.37	J	0.32	0.14	J
U-145	19-20	0.10	0.17	UJ	0.24	0.12	J
U-145	2-3.5	0.84	0.46	J	0.45	0.18	J

NOTES:

ONLY SELECTED BORINGS WERE ANALYZED FOR ALPHA ACTIVITY.
VALUE; ± UNCERTAINTY; QUALIFIER
ALL VALUES IN pCi/g
U = NOT DETECTED
J = ESTIMATED VALUE

LEGEND:

= CURRENT BUILDINGS

U-051 = SOIL BORING LOCATION

0 40 80 160

SCALE IN FEET

SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 6
ALPHA SPECTROSCOPY RESULTS

DATE: MARCH 11, 2003
JOB NO.: 27010-039-007
DRAWN BY: MAR
CHK'D BY: CS
SCALE: AS SHOWN

URS

1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115

Location	Depth	Actinium 228	+/-	Q	Protactinium 234M	+/-	Q	Location	Depth	Actinium 228	+/-	Q	Protactinium 234M	+/-	Q
U-001	7.5-8 ft	0.16	0.18	U	3.8	4.7	U	U-075B	6.5-7 ft	5.0	1.4		36	12	
U-002	0-2 ft	13.7	3.7		54	18		U-075E	11.5-12 ft	0.47	0.24		23	12	
U-002	18-20 ft	0.33	0.20	U	-0.7	3.1	U	U-076	1-2 ft	0.84	0.46		5.8	5.6	U
U-003	18.5-20 ft	0.24	0.15	U	1.2	3.6	U	U-076	7-8 ft	0.20	0.17	U	1.7	2.6	U
U-003	18.5-20 ft	-0.03	0.13	U	3.0	3.0	U	U-077	2.5-3 ft	0.71	0.37		48	13	
U-004	7.5-8 ft	0.03	0.15	U	1.5	3.7	U	U-077	7.5-8 ft	0.56	0.30	U	3.9	4.9	U
U-005A	1-1.5 ft	5.4	1.6		154	28		U-078	2.5-3.5 ft	1.75	0.66		202	37	
U-005B	4.5-4.5 ft	0.24	0.17	U	-0.04	4.3	U	U-078	7.5-8 ft	0.24	0.15	U	1	3.1	U
U-005C	19.5-20 ft	0.13	0.12	U	-0.1	3.7	U	U-079C	3-3.5 ft	1.07	0.54		98	22	
U-006	15.5-16 ft	0.11	0.14	U	-0.4	3.5	U	U-079C	7.5-8 ft	0.19	0.14	U	6.4	4.8	U
U-006B	19.5-20 ft	0.23	0.13	U	-1.9	3.1	U	U-081	7.5-8 ft	0.92	0.42		2.9	4.7	U
U-007	0.5-1.5 ft	0.90	0.38		69	17		U-082	1.5-2 ft	1.54	0.53		53	14	
U-007	7.5-8 ft	0.45	0.26	U	4.8	4.0	U	U-082	11.5-12 ft	0.13	0.16	U	3.3	4.0	U
U-008	1-1.5 ft	0.86	0.43		32	12		U-083	11.5-12 ft	-0.01	0.13	U	0.06	3.9	U
U-008	15-15.5 ft	0.06	0.13	U	-0.5	2.8	U	U-083	2.5-3 ft	0.72	0.39		63	14	
U-009	1-1.5 ft	0.84	0.41		12.2	8.1	U	U-084	2.5-3 ft	1.58	0.56		31	10	
U-009	19.5-20 ft	0.06	0.14	U	-1.2	3.6	U	U-084	7.5-8 ft	0.35	0.20	U	2.1	4.1	U
U-011	2.5-3 ft	0.07	0.14	U	28.9	9.3		U-085	2.5-3 ft	0.83	0.38		73	23	
U-011	2.5-3 ft	0.74	0.31		25	11		U-085	7.5-8 ft	0.27	0.19	U	0.3	3.6	U
U-011	7.5-8 ft	0.08	0.12	U	1.4	3.5	U	U-086B	19.5-20 ft	0.09	0.12	U	4.0	4.1	U
U-012	15-16 ft	0.14	0.12	U	0.4	3.0	U	U-086B	2.5-3 ft	1.26	0.46		22.3	8.2	
U-012	15-16 ft	0.11	0.11	U	-0.3	3.8	U	U-087	2.5-3 ft	1.03	0.54		133	26	
U-012	2-3 ft	5.3	1.6		73	20		U-087	6.5-8 ft	0.15	0.16	U	3.0	3.0	U
U-013	1.5-2.5 ft	0.45	0.29	U	102	20		U-089	2-3 ft	0.65	0.32		5.7	5.4	U
U-013	15.5-16 ft	0.10	0.10	U	1.5	4.7	U	U-089B	2.5-3 ft	1.18	0.40		12.5	8.9	
U-014	1.5-2.5 ft	1.24	0.59		103	31		U-089B	7.5-8 ft	0.45	0.27	U	2.4	4.8	U
U-014	15-16 ft	0.15	0.16	U	3.8	3.3	U	U-090	1-2 ft	1.12	0.60		5.6	7.4	U
U-015	18-20 ft	0.62	0.26		14.0	6.3	U	U-091	2.5-3 ft	2.58	0.86		126	28	
U-015	8-10 ft	1.35	0.49		53	15		U-092	19.5-20 ft	0.15	0.13	U	-1.6	3.6	U
U-016A	15.5-15.5 ft	0.036	0.018		1.07	0.56	U	U-092	2-2.5 ft	1.40	0.49		13.5	6.6	U
U-016A	3.5-6.5 ft	2.98	0.94		73	16		U-093	1-2.5 ft	0.63	0.29		71	17	
U-016D	19.5-20 ft	0.37	0.19	U	8.7	4.9	U	U-093	19-19.5 ft	0.16	0.14	U	0.09	3.8	U
U-017	19.5-20 ft	0.03	0.11	U	5.5	4.4	U	U-094	11.5-12 ft	0.24	0.22	U	3.6	6.3	U
U-017	7-8 ft	0.35	0.21	U	56	16		U-094	2.5-4 ft	0.76	0.31		37	11	
U-018	19.5-20 ft	0.45	0.21		1.4	3.7	U	U-094	11.5-12 ft	0.31	0.24	U	-0.8	4.8	U
U-018	2.5-3 ft	0.69	0.31		25	12		U-095	19-19.5 ft	0.002	0.087	U	-2.1	2.8	U
U-019	2-3.5 ft	6.8	1.9		100	20		U-095	2.5-3.5 ft	0.20	0.49		105	22	
U-019	19.5-20 ft	0.02	0.13	U	2.1	3.8	U	U-096B	1.5-2.5 ft	0.56	0.54		23.7	9.6	
U-019	2-3.5 ft	6.9	1.9		83	20		U-096B	1.5-2.5 ft	1.67	0.63		23	12	
U-020	19.5-19.5 ft	0.14	0.13	U	5.9	6.4	U	U-096B	19-19.5 ft	0.18	0.14	U	2.4	4.0	U
U-020	2.5-3 ft	1.51	0.56		39	11		U-097	19.5-20 ft	-0.01	0.11	U	1.6	3.0	U
U-021	18-20 ft	0.06	0.18	U	1.6	3.6	U	U-097	2.5-3.5 ft	0.86	0.38		-6.4	6.5	U
U-021	1.5-2 ft	0.84	0.38		65	16		U-098	19.5-20 ft	0.07	0.14	U	0.9	2.9	U
U-021	18-20 ft	0.23	0.15	U	0.8	3.1	U	U-098	2.5-3.5 ft	0.32	0.20	U	1.8	4.7	U
U-022	7.5-7.8 ft	0.30	0.21	U	10.6	5.7	U	U-099	11-11.5 ft	0.85	0.38		74	18	
U-022	2-2.5 ft	0.48	0.23		8.3	8.2		U-099	19.5-20 ft	0.07	0.11	U	7.2	4.6	U
U-023	11.5-12 ft	0.41	0.21		-0.2	4.4	U	U-100	3.5-4 ft	1.26	0.51		26.3	9.7	
U-024	11.5-12 ft	0.50	0.26	U	1	4.3	U	U-100B	3.5-4 ft	1.79	0.63		43	13	
U-024	2.5-3 ft	0.76	0.38		43	14		U-100C	19-19.5 ft	0.39	0.23	U	4.1	3.5	U
U-025	11.5-12 ft	0.24	0.20	U	2.1	3.5	U	U-100C	3-3.5 ft	0.96	0.38		13.7	2.4	
U-025	2-2.5 ft	2.49	0.81		28	10		U-101	11-11.5 ft	0.09	0.14	U	-0.53	0.41	UJ
U-026	11.5-12 ft	0.56	0.34		4.0	4.2	U	U-102	1.5-3 ft	0.88	0.35		6.9	1.5	
U-026	3-4 ft	8.8	2.4		212	34		U-102	7.5-8 ft	0.54	0.29	U	-0.48	0.85	U
U-027	11.5-12 ft	0.23	0.16	U	5.5	3.9	U	U-103	2-2.5 ft	0.55	0.31	U	37.9	4.7	
U-027	2-2.5 ft	0.64	0.42	U	358	57		U-103	7.5-8 ft	1.01	0.42		0.06	0.87	U
U-028	1.5-2 ft	1.13	0.49		-1.3	6.9	U	U-104	1-1.5 ft	1.20	0.47		36.1	5.0	
U-028	7.5-8 ft	0.45	0.21		3.5	3.6	U	U-105	1.5-2 ft	0.89	0.54	U	14.0	2.8	
U-029	1-1.5 ft	1.02	0.46		7.4	7.3	U	U-105	1-1.5 ft	0.81	0.57	U	74.3	8.6	
U-029	7.5-8 ft	0.32	0.18	U	2.1	3.8	U	U-106	1.5-2.5 ft	1.19	0.54		6.7	1.9	
U-030	2.5-3 ft	1.03	0.41		-1.0	6.9	U	U-106	19.5-20 ft	0.11	0.12	U	-0.008	0.39	U
U-030	7.5-8 ft	0.51	0.23		0.2	4.6	U	U-107B	19.5-20 ft	0.12	0.12	U	2.11	0.97	
U-031	11.5-11.5 ft	1.49	0.56		88	18		U-107B	3.5-4 ft	1.04	0.43		11.2	3.2	
U-031B	19.5-20 ft	0.07	0.13	U	9.1	5.2	U	U-108	1.5-2.5 ft	1.61	0.60		30.6	4.5	
U-032	19.5-20 ft	0.12	0.13	U	1.2	3.2	U	U-108	19.5-20 ft	0.05	0.14	U	0.79	0.59	U
U-032	2.5-3 ft	1.62	0.63		82.5	8.2		U-109	19.5-20 ft	0.17	0.17	U	1.77	0.99	
U-033	1.5-2.5 ft	1.64	0.59		90	20		U-109	2-2.5 ft	1.45	0.61		31.4	4.5	
U-033B	19.5-20 ft	0.09	0.13	U	1.6	2.9	U	U-110	10-12.5 ft	0.23	0.18	U	-0.46	0.69	U
U-034	19.5-20 ft	0.15	0.14	U	1.9	2.8	U	U-110	1-1.5 ft	2.37	0.90		40.9	5.3	
U-034	3-3.5 ft	0.55	0.27		172	28		U-111	1.5-2 ft	1.31	0.47		30.2	4.5	
U-035B	12-12.5 ft	0.14	0.17	U	0.4	3.4	U	U-111	11.5-12 ft	0.62	0.36	U	0.20	0.72	U
U-035B	19-20 ft	0.06	0.13	U	-0.5	3.4	U	U-112	1.5-2 ft	0.66	0.46	U	15.4	2.9	
U-036	14-16 ft	0.19	0.15	U	9.0	6.5		U-112	19.5-20 ft	0.06	0.15	U	-0.45	0.32	UJ
U-036	18-22 ft	0.16	0.13	U	19.3	6.5		U-112	2-2.5 ft	1.33	0.59		27.5	3.9	
U-036	38-40 ft	0.12	0.11	U	11.4	5.5	U	U-113	19.5-20 ft	0.14	0.15	U	-0.70	0.46	UJ
U-037	19.5-20 ft	0.11	0.12	U	-0.5	3.7	U	U-113B	1-2 ft	1.01	0.63		24.8	4.4	
U-037	3-3.5 ft	1.16	0.55		591	79		U-114	2-4 ft	3.0	1.0		211	25	
U-038	19-19 ft	0.05	0.14	U	34	11		U-114	1.5-4 ft	2.78	0.94		182	22	
U-039	1.5-1.5 ft	0.90	0.42		45	15		U-114	19-20 ft	0.15	0.11	U	3.5	1.1	
U-039	7.5-8 ft	0.35	0.19	U	-0.8	3.9	U	U-114	6-7 ft	6.4	1.8		277	30	
U-040	19.5-20 ft	0.02	0.12	U	1	2.4	U	U-115	18.5-19.5 ft	0.27	0.20	U	-0.49	0.55	U
U-040	2.5-4 ft	0.41	0.22		0.6	3.9	U	U-115	2-3 ft	1.45	0.68		96	12	
U-041	18-20 ft	0.1	0.12	U	1.6	3.5	U	U-115	18.5-19.5 ft	0.1	0.22	U	-0.16	0.54	U
U-041	2.5-3 ft	2.11	0.75		44	13		U-116	1-2.5 ft	0.61	0.40	U	26.0	4.1	
U-042	1-2 ft	13.4	3.6		86	18		U-116	19-20 ft	0.06	0.11	U	-0.09	0.43	U
U-042	14-18 ft	0.34	0.17	U	30	10		U-116	39.5-40 ft	0.06	0.11	U	-0.15	0.47	U
U-042	14-18 ft	0.05	0.15	U	29.8	9.0		U-117	1-2.5 ft	1.26	0.51		59.4	8.1	
U-043	19-20 ft	0.21	0.14	U	-2.7	3.2	U	U-117	39.5-40 ft	0.17	0.18	U	-0.35	0.49	U
U-043	2.5-3 ft	2.94	0.99		296	43		U-118	19.5-20 ft	0.20	0.14	U	0.80	0.82	J
U-044	19-20 ft	0.10	0.12	U	-1.2	3.3	U	U-118	38-39 ft	0.16	0.15	U	-0.86	0.49	UJ
U-044	3-4 ft	1.38	0.56		34	12		U-118	7-8 ft	1.07	0.41		37.8	5.2	
U-046	19.5-20 ft	0.19	0.15	U	1	3.5	U	U-119	1.5-2.5 ft	1.11	0.44		11.0	2.1	
U-046	2.5-3 ft	4.1	1.3		800	100		U-119	17.5-18.5 ft	0.03	0.13	U	0.89	0.63	
U-047	19.5-20 ft	0.19	0.15	U	2.9	3.6	U	U-120	19.5-20 ft	0.16	0.14	U	-0.09	0.68	U
U-047	6-7 ft	0.65	0.27		7.8	5.3	U	U-120	2-3 ft	0.35	0.23	U	8.2	1.8	
U-048A	1.5-2.5 ft	0.38	0.31	U	7.2	7.2	U	U-120	39-40 ft	0.1	0.12	U	-0.13	0.38	U
U-048A	0.5-1 ft	0.81	0.55	U	41	25		U-121	1.5-2 ft	2.13	0.89		17.5	3.3	
U-048B	0.5-1 ft	0.37	0.22	U	0.07	3.6	U	U-121	19.5-19.5 ft	0.08	0.17	U	-0.25	0.50	U
U-048B	7.5-8 ft	0.26	0.17	U	0.4	3.3	U	U-122	0.5-1.5 ft	0.50	0.30	U	9.2	1.9	
U-048C	7.5-7.5 ft	0.30	0.19	U	0.3	4.1	U	U-122	19-20 ft	0.06	0.12	U	-0.69	0.38	UJ
U-048D	0.5-1 ft	0.28	0.19	U	-0.9	3.8	U	U-123	11-12 ft	0.18	0.17	U	2.6	1.1	
U-048D	7.5-8 ft	0.25	0.19	U	-0.9	4.7	U	U-124	19-20 ft	0.15	0.13	U	0.94	0.88	
U-048E	0.5-1 ft	0.27	0.18	U	6.2	5.3	U	U-124	3-4 ft	0.71	0.32		0.01	0.82	U
U-048E	7.5-8 ft	0.20	0.15	U	2.2	3.7	U	U-124	39-40 ft	0.09	0.11	U	0.12	0.42	U
U-049	19-20 ft	0.083	0.099	U	0.4	2.3	U	U-125	19-20 ft	0.06	0.11	U	-0.16	0.43	U
U-049	2-3 ft	0.95	0.39		0.1	5.4	U	U-125	3-3.5 ft	2.8	1.2		27.6	5.4	
U-050	- ft	0.16	0.13	U	-1.5	1.2	U	U-126	2.5-3.5 ft	1.56	0.54		15.9	3.4	
U-050	18.5-20 ft	-0.02	0.13	U	1.2	2.1	U	U-126	11.5-12 ft	0.1	0.14	U	-0.95	0.49	UJ
U-050	3-4 ft	1.51	0.62		-3.9	9.2	U	U-127	18.5-19.5 ft	0.03	0.12	U	-0.87	0.53	UJ
U-051	19-20 ft	0.06	0.11	U	1.5	3.5	U	U-127	2-3 ft	1.11	0.48		0.08	1.1	U
U-051	2-3 ft	0.31	0.18	U	-2.3	3.9	U	U-128	19.5-20 ft	-0.006	0.11	U	-0.25	0.53	U
U-052	1-2 ft	0.79	0.40		-0.06	5.0	U	U-128	39.5-40 ft	0.22	0.16	U	-0.42	0.49	U
U-052	19-20 ft	0.16	0.13	U	3.0	2.9	U	U-128	6.5-7.5 ft	1.20	0.47		10.5	2.3	
U-053	19.5-20 ft	0.18	0.13	U	1.7	3.4	U	U-129	38.5-39.5 ft	0.15	0.17	U	-0.51	0.51	U
U-053	2.5-3.5 ft	0.43	0.27	U	1.4	4.7	U	U-129	18.5-19.5 ft	0.17	0.14	U	3.85	0.98	
U-054	19.5-20 ft	0.30	0.15		-0.5	3.6	U	U-129	2-2.5 ft	0.45	0.32	U	10.9	2.2	
U-054	2.5-3.5 ft	6.0	1.7		148	28		U-129	6.5-7 ft	1.66	0.71		12.6	2.5	
U-055	0.5-1.5 ft	1.54	0.60		23	10		U-130	1.5-2.5 ft	0.96	0.56		7.4	2.4	
U-055	19.5-20 ft	0.12	0.18	U	0.4	4.1	U	U-130	21.5-22.5 ft	0.15	0.14	U	-0.30	0.40	U
U-056	5.5-6 ft	-0.02	0.13	U	-3.5	3.1	U	U-130	38.5-39.5 ft	0.15	0.14	U	-0.36	0.38	U
U-056	0-1 ft	0.36	0.23	U	10.2	6.2	U	U-131	0.5-2 ft	0.74	0.40		10.9	2.2	
U-056	10.5-11.5 ft	0.17	0.12	U	-0.7	3.5	U	U-131	0.5-2 ft	0.94	0.37		11.4	2.3	
U-056	19.5-20 ft	0.08	0.14	U	-2.9	3.0	U	U-131	18.5-19.5 ft	0.11	0.13	U	-0.41	0.42	U
U-056	5.5-6 ft	0.20	0.15	U	3.3	3.8	U	U-131	38.5-39.5 ft	0.13	0.15	U	-0.44	0.45	U
U-057	0.5-1.5 ft	0.56	0.25		-0.6	5.4	U	U-132	12-13 ft	0.45	0.27	U	124	15	
U-057	19.5-20 ft	0.05	0.13	U	-1.5	3.5	U	U-132	13-13.5 ft	0.57	0.55	U	450	54	
U-058	2.5-3 ft	0.51	0.26		12.0	7.3		U-132	14.5-16 ft	0.11	0.14	U	7.9	1.7	
U-058	7.5-8 ft	0.24	0.25	U	6.6	4.7	U	U-132	23-24 ft	0.17	0.17	U	11.1	2.2	
U-059	1.5-2.5 ft	5.2	1.6		25	11		U-133	18.5-19.5 ft	0.11	0.14	U	-0.35	0.45	U
U-059	0.5-1.5 ft	6.9	2.0		160	33		U-133	2.5-3.5 ft	1.10	0.50		5.1	2.4	
U-059	7.5-8 ft	0.19	0.20	U	-1.2	5.5	U	U-133	38.5-39.5 ft	0.1	0.10	U	-1.4	1.0	UJ
U-060	2.5-3 ft	0.83	0.40		6.8	7.9	U	U-134	18.5-19.5 ft	0.24	0.16	U	0.30	0.58	U
U-060	7.5-8 ft	0.85	0.42		-1.3	3.5	U	U-134	2-3 ft	0.98	0.61	U	0.7	1.2	U
U-061	0.5-1.5 ft	4.1	1.2		199	31		U-134	38.5-39.5 ft	0.07	0.13	U	-0.74	0.55	UJ
U-061	7.5-8 ft	0.51	0.22		-0.9	4.0	U	U-135	18.5-19.5 ft	-0.06	0.15	U	2.2	1.3	
U-062	1-1.5 ft	1.29	0.50		101	20		U-135	7-8 ft	0.39	0.31	U	23.3	3.8	
U-062	7.5-8 ft	0.15	0.17	U	1.0	3.4	U	U-136	2-3 ft	0.58	0.32		28.9	4.4	
U-063	1-1.5 ft	0.84	0.40		9.3	8.4	U	U-136	7-8 ft	0.26	0.17		-0.1	0.58	U
U-063	7.5-8 ft	1.58	0.59		5.0	7.2	U	U-137	1.5-3 ft	0.95	0.38		13.2	2.8	
U-064	11.5-12 ft	0.002	0.13	U	-1.5	3.6	U	U-137	7-8 ft	0.40	0.21		0.16	0.56	U
U-064	2.5-3 ft	0.64	0.31		34	11		U-138	1.5-2.5 ft	0.36	0.20		0.24	0.56	U
U-065B	11.5-12 ft	0.12	0.16	U	3.1	3.3	U	U-138	7-8 ft	1.01	0.45		24.0	3.7	
U-065B	2.5-3 ft	3.9	1.2		12.2	7.3	U	U-139	1.5-2.5 ft	0.58	0.30		7.6	2.0	
U-066	2-2.5 ft	1.22	0.49		-4.3	6.7	U	U-139	7-8 ft	0.60	0.31		0.14	0.83	U
U-066	7.5-8 ft	0.29	0.20	U	2.0	4.5	U	U-140	1-2 ft	0.59	0.33		1.6	1.4	
U-067	2-2.5 ft	0.60	0.46	U	542	72		U-140B	2-3 ft	1.23	0.50		0.2	1.3	U
U-067	7.5-8 ft	0.40	0.20		0.7	4.5	U	U-140B	7.5-8 ft	0.13	0.15		-0.13	0.49	U
U-068	2-3 ft	0.47	0.39	U	275	45		U-141	3-4 ft	0.25	0.19		12.6	2.3	
U-068	2-3 ft	0.68	0.60	U	283	43		U-141	7-8 ft	0.44	0.22		-0.01	0.66	U
U-068	6.5-8 ft	0.38	0.19		3.6	4.1	U	U-142	1.5-2.5 ft	1.73	0.65		1.2	1.3	U
U-070	2.5-3 ft	0.53	0.30		34	12		U-142	3-4 ft	0.22	0.16		-0.26	0.52	U
U-070	7.5-8 ft	0.80	0.31		18.7	9.4		U-143	2.5-3 ft	0.72	0.28		-0.14	0.49	U
U-071	1.5-2 ft	1.74	0.63		2.8	6.9	U	U-143	3-4 ft	0.29	0.17		-0.07	0.45	U
U-071	7.5-8 ft	0.43	0.22		2.2	3.9	U	U-144	2.5-3 ft	0.55	0.30		-0.40	0.98	U
U-072	2.5-3.5 ft	0.97	0.44		11.0	6.8	U	U-144	3-4 ft	0.55	0.29		-0.18	0.54	U
U-073	2-2.5 ft	0.47	0.34	U	29	12		U-145	19-20 ft	0.14	0.14		-0.61	0.34	UJ
U-073	7.5-8 ft	0.23	0.17	U	2.7	3.6	U	U-145	2-3.5 ft	0.0	0.0		0.0	0.0	
U-074	11.5-12 ft	0.43	0.23		18	11		U-146	1-2 ft	1.27	0.54		0.8	1.3	U
U-074	11.5-12 ft	0.17	0.20	U	21	10		U-146	6.5-7.5 ft	0.13	0.18		0.37	0.51	U
U-074B	19.5-19.5 ft	0.17	0.17	U	5.1	6.9	U	U-147	1-2 ft	0.36	0.24		0.28	0.70	U
U-075A	7-7.5 ft	43	11		23	19		U-147	14.5-15.5 ft	0.11	0.11		0.03	0.43	U
U-075B	2.5-3 ft	24.0	6.4		42	18									

NOTES:
ONLY SELECTED BORINGS WERE ANALYZED FOR ALPHA ACTIVITY.
VALUE; ± UNCERTAINTY; QUALIFIER
ALL VALUES IN pCi/g
U = NOT DETECTED
J = ESTIMATED VALUE

LEGEND:
= CURRENT BUILDINGS
U-051 = SOIL BORING LOCATION

0 20 40 80
SCALE IN FEET

SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

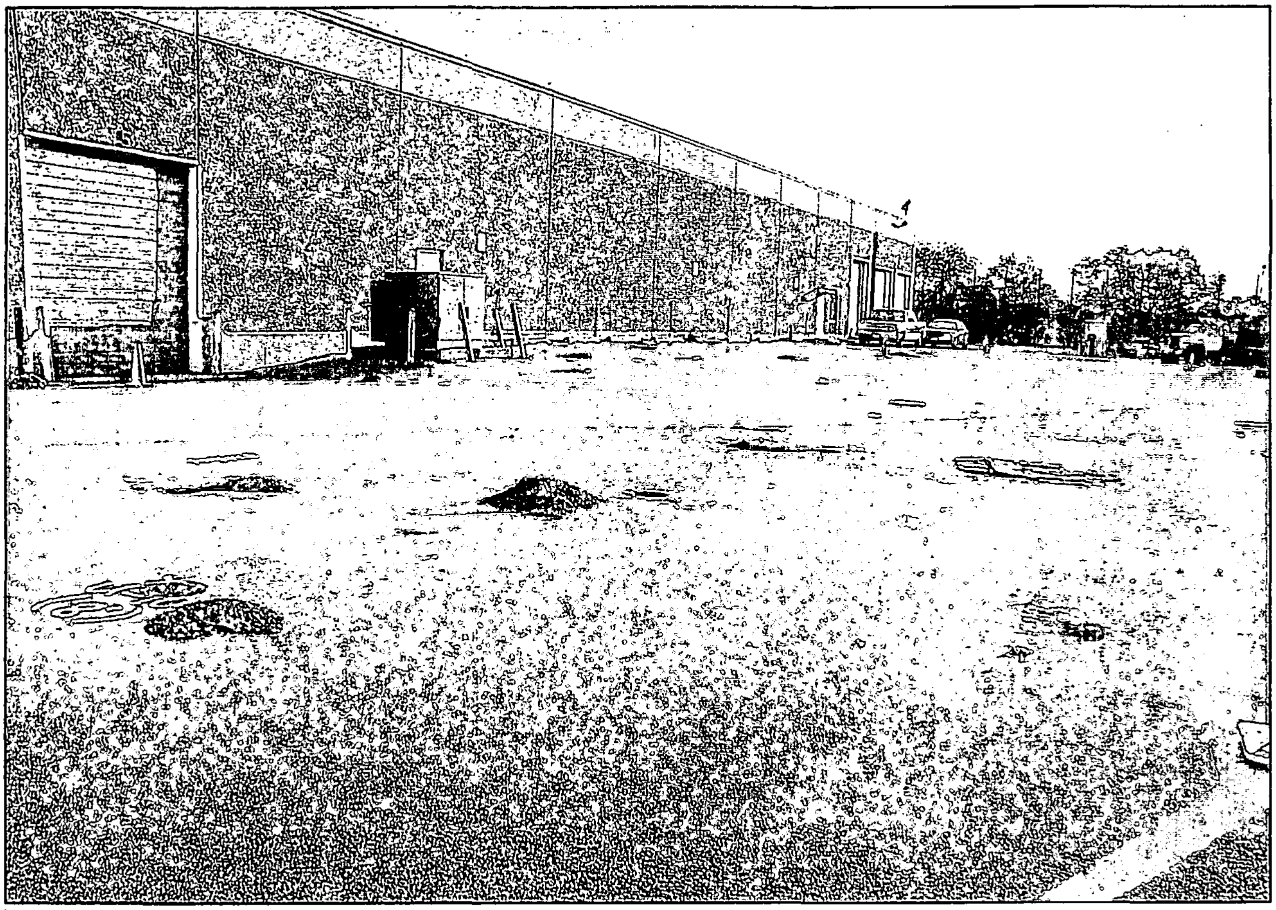
GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 7
GAMMA SPECTROSCOPY RESULTS

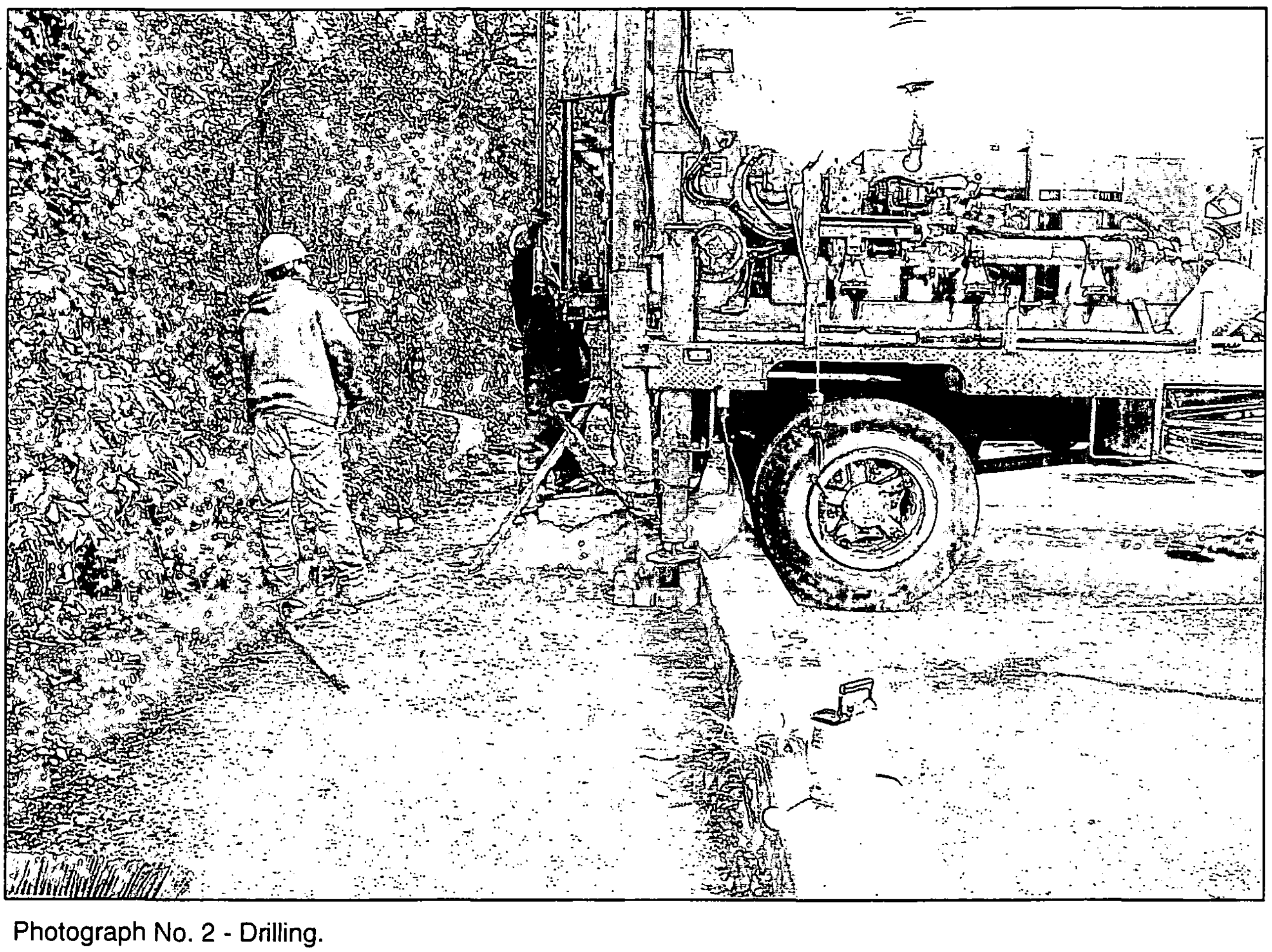
DATE: MARCH 11, 2003	
JOB NO.: 27010-039-007	
DRAWN BY: MAR	CHK'D BY: CS
SCALE: AS SHOWN	

URS
1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115

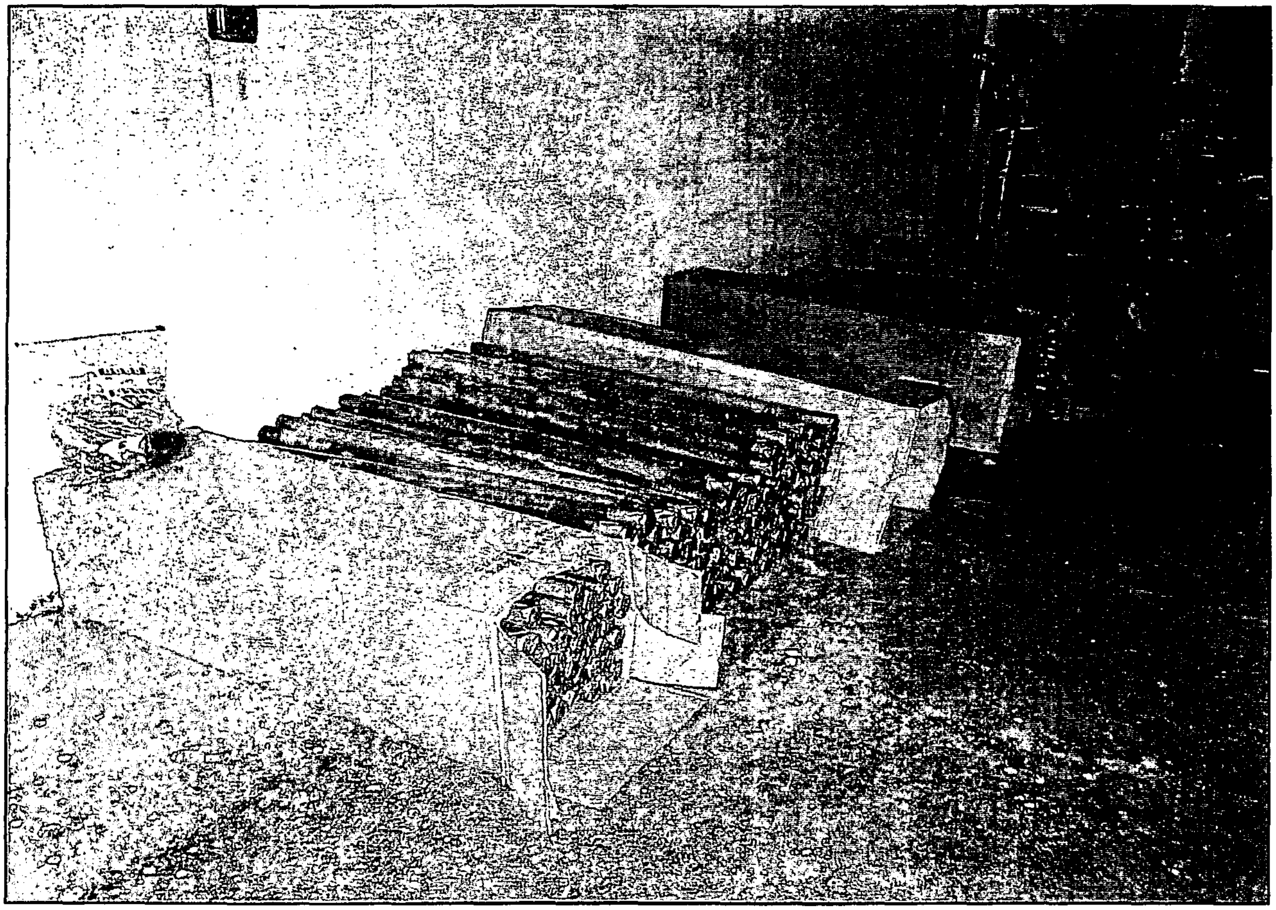
APPENDIX A



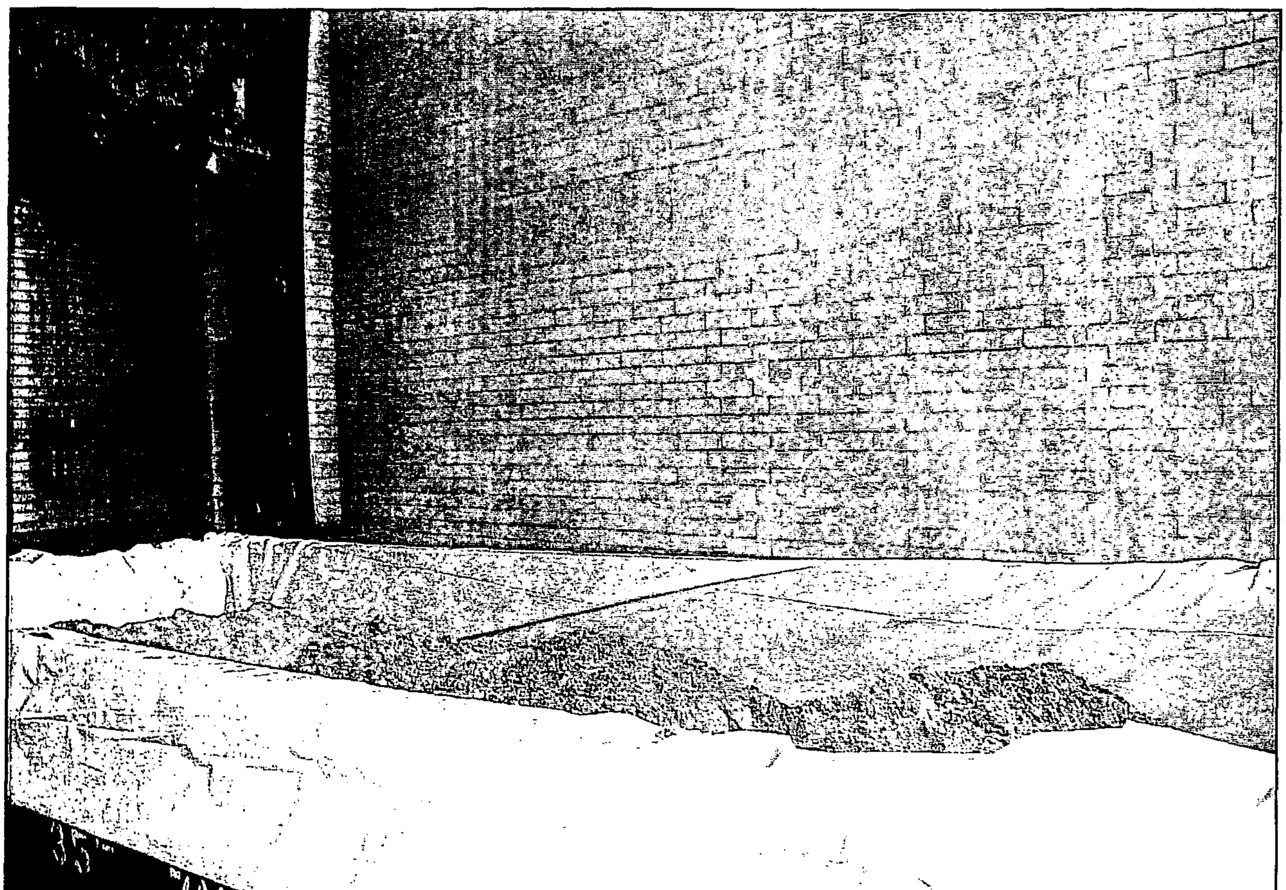
Photograph No. 1 - Soil boring locations on the south side of the 100 Property.



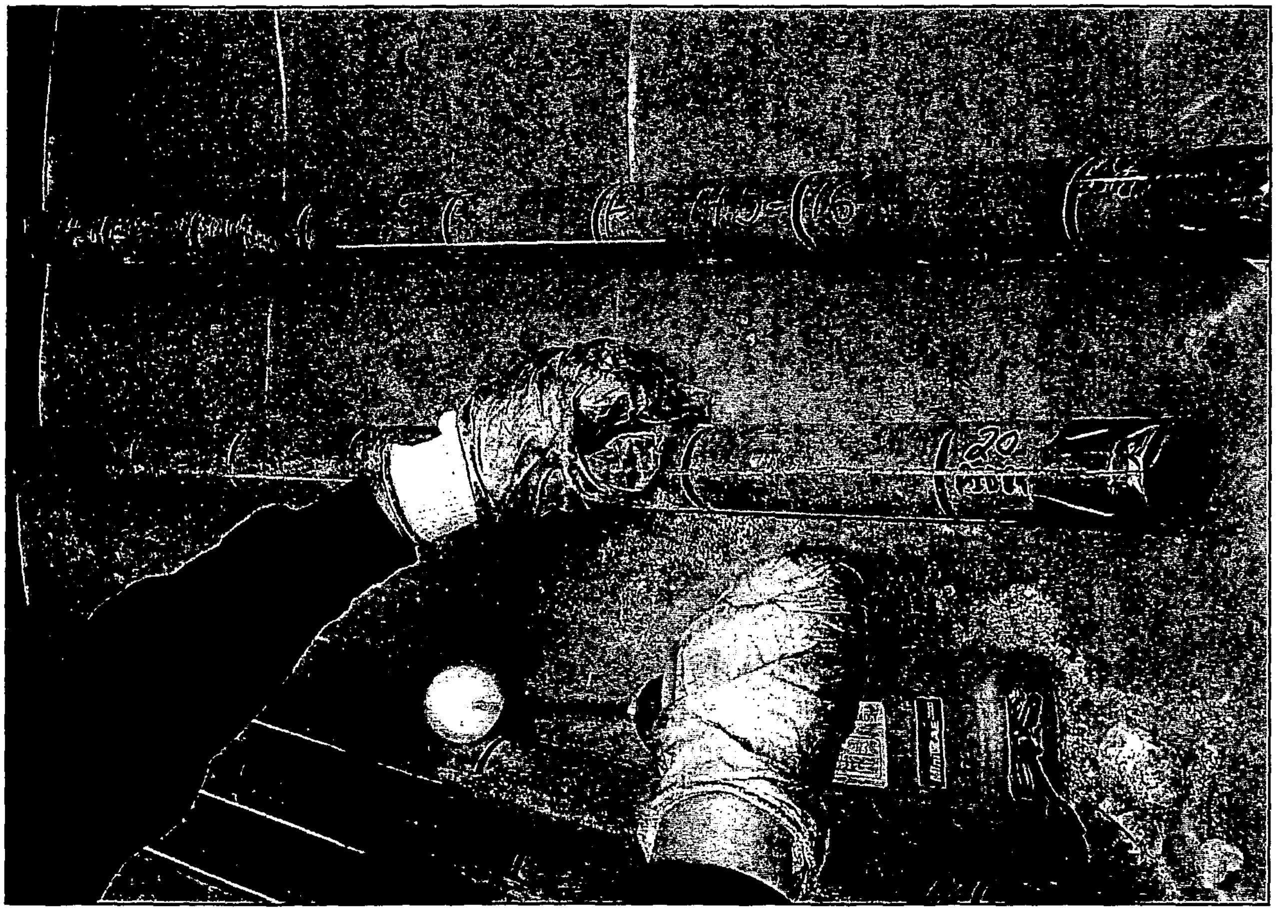
Photograph No. 2 - Drilling.



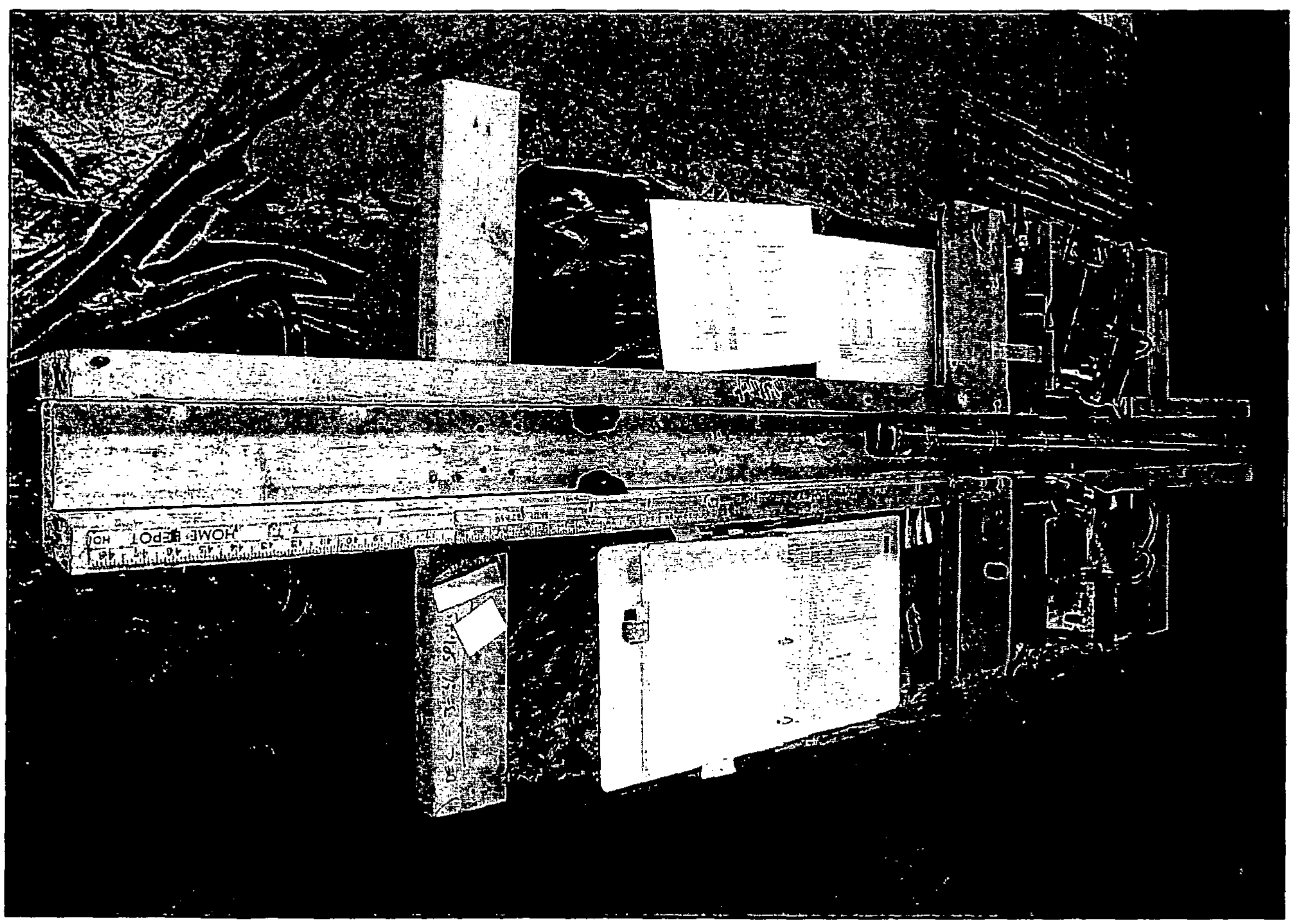
Photograph No. 5 - Temporary storage of soil cores.



Photograph No. 6 - Soil Roll Off.

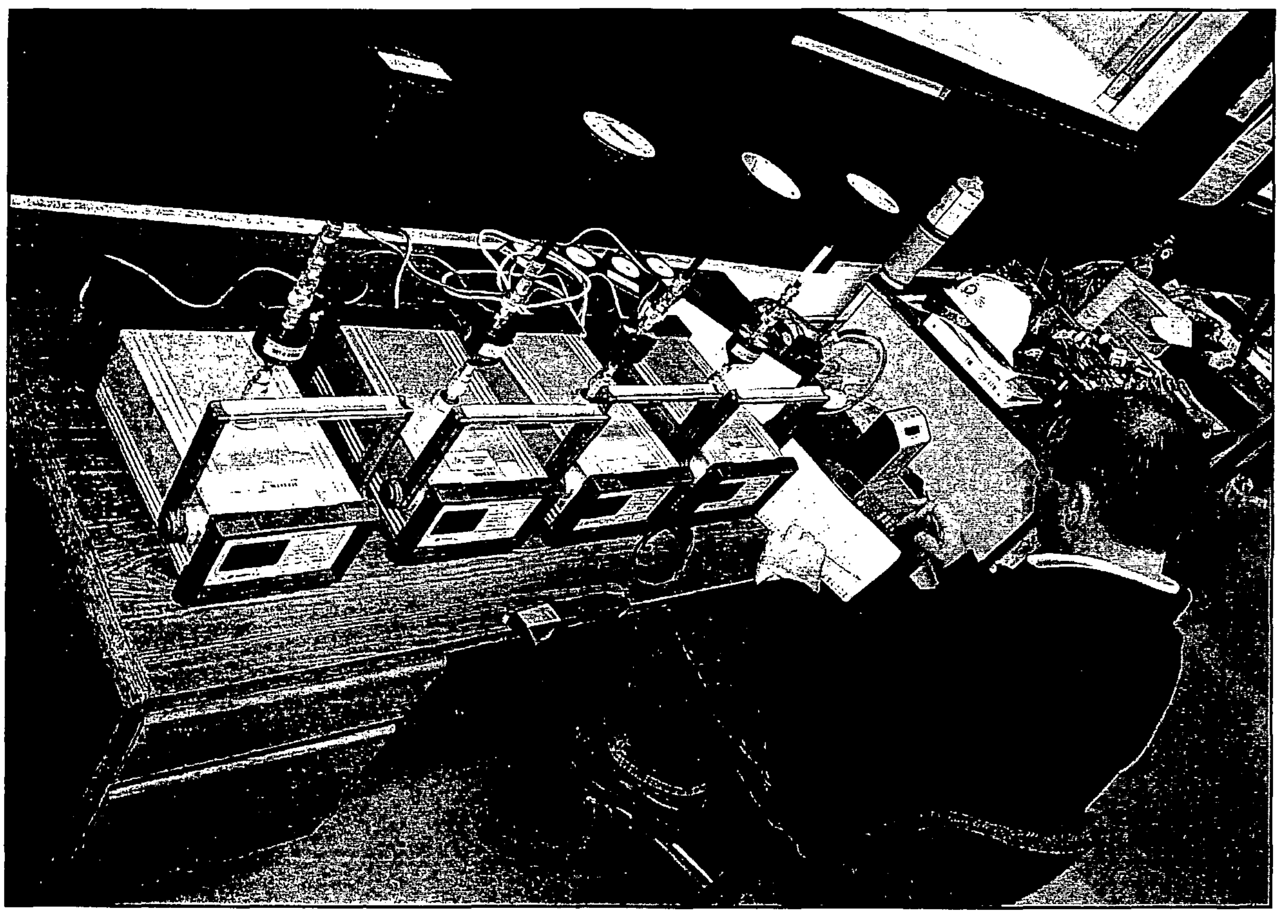


Photograph No. 3 - Geologist VOC scan of soil cores.



Photograph No. 4 - Rad scan of soil cores.

Photograph No. 7 - Community Air Monitoring Program (CAMP) Station



Photograph No. 8 - Calibration of Health and Safety Equipment

APPENDIX B

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-1

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	36	NA		***Sand (SW)*** Asphalt surface overlying brown to black, fine to coarse sand, trace fine gravel and slag, subround to round, loose, dry (Fill).	NM	0	
				Sand (SW) Light grey, fine to coarse sand, little gravel, trace silt, subround to round, loose, moist (Native). Grades to brownish yellow.			
4–8	33	NA		***Silt (ML)*** Brownish yellow silt with some clay, little gravel, subround to round, wet.	NM	0	Sample collected from 4' for VOC analysis. Sample collected from 5' for metal and Nickel analyses. Sample collected from 7.5-8' for radiological analysis.
				Sand (SW) Brownish yellow to orange fine to coarse sand with little gravel, subround to round, loose, wet.			
				Borehole was completed at 8 feet on 10/10/02. Groundwater was encountered at approximately 4 feet during drilling.			

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/9/02
Sampler Type: Standard split spoon

Log of Boring: U-2

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1	16	24		***Sand and Gravel (SW)*** Brown, medium sand and gravel with some silt, medium dense, subangular, (Fill).	0	0	Samples collected from 0-2 feet for radiological analyses.
3	18	17		***Sand (SP)*** Orangish brown, medium sand with trace gravel, very dense, dry (Native).	0.7	0	
5	20	66			0.9	0	
7	16	62			1.1	0	
9	14	68			1.3	0	
11	18	42			0.9	0	
13	20	64		Grades to moist.	1.3	0	
15	18	66			1.4	0	–
17	15	49			0.6	0	
19	16	38		Grades to light brown, fine sand with trace gravel.	0.9	0	Sample collected from 18-20 feet for radiological analysis.
21	16	21		Grades to medium sand with little gravel, medium dense, round, moist.	2.3	0	
23	18	37		Grades to dense.	1.5	0	
25	16	37			1.1	0	

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/9/02
Sampler Type: Standard split spoon

Log of Boring: U-2

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26				***Sand (SW)*** Grades to brown, medium to coarse sand with trace gravel, medium dense, moist.			
27	14	29		***Sand (SP)***	0.8	0	
28-29	18	39		Grades to fine sand. Grades to orangish brown, dense.	0.4	0	
30-31	18	42		Grades to light brown fine sand and gravel, round.	1.3	0	
32-33	20	35			1.7	0	Sample collected from 32-34' for VOC analysis.
34-35	19	41			0.6	0	
36-37	13	41			0.0	0	
38-39	18	33			0.1	0	
40-50				Borehole was completed at 40 feet on 10/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-3

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	40	NA	ML / SW	***Silt (ML)*** Asphalt surface overlying very dark brown silt with trace fine sand and organics, medium dense, moist. ***Sand (SW)*** Grades to brownish yellow with some fine sand and trace gravel, subround to round, medium dense, moist.	NA	0	Sample was collected from 4 feet for VOC analysis.
4–8	41	NA	SW	Brownish yellow, fine to coarse sand with some gravel, subround to round, loose, dry.	NA	0	
8–12	44	NA	SW		NA	0	
12–16	33	NA	SW		NA	0	
16–20	30	NA	SW		NA	0	Sample was collected from 18.5-20' for radiological analysis.
20–25				Borehole was completed at 20 feet on 10/10/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-4

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	30	NA		***Sand (SW)*** Asphalt overlying light grey, fine to coarse sand with some gravel. Grades to brown, subround to round.	NM	0	Sample collected from 3.5 feet for Metals analysis.
				Clay (CL) Brown grading to brownish yellow clay, trace silt, plastic, wet.			
4–8	36	NA		***Sand (SW)*** Brownish yellow sand with some fine to coarse gravel, subround to round, loose, dry.	NM	0	Sample collected from 7.5 feet for VOC analysis and 7.5-8 feet for radiological analysis
8–25				Borehole was completed at 8 feet on 10/10/02. Groundwater was encountered at 2 feet during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02-10/16/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-5A/5B/5C

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	37	NA		***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand with little gravel, angular to round, loose, dry. ***Silt (ML)*** Dark brown silt with trace fine sand and organics, medium dense, moist.	NM	0	A sample was collected from 1-1.5 feet from U-5A for radiological analysis.
4-8	41	NA		***Silt and Sand (SM)*** Brownish yellow sandy silt with little gravel, subround to round, fine, medium dense, wet.	NM	0	A sample was collected from 4.5 feet from U-5B for radiological analysis.
8-12	32	NA		***Sand (SW)*** Brownish yellow fine to coarse sand with some gravel, subround to round, coarse to fine, loose, dry.	NM	0	A sample was collected from 8 feet from U-5B for Metals and VOC analysis.
12-16	46	NA			NM	0	
16-20	31	NA			NM	0	A sample was collected from 19.5 to 20 feet from U-5C for radiological analysis.
20-25				Borehole U-5A was advanced from 0 to 4 feet on 10/10/02. Borehole U-5B was advanced from 4 to 16 feet on 10/10/02. Borehole U-5C was advanced from 16 to 20 feet on 10/16/02. Groundwater was encountered at 2.5 feet during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02, 10/16/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-6/6B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	44	NA		***Sand (SW)*** Asphalt surface overlying dark grey to brown, fine to coarse sand with little gravel, angular to round, loose, dry. ***Silt (ML)*** Brown silt with some fine sand, trace organics, subround to round, medium dense, moist.	NM	0	
4–8	39	NA		***Sand (SW)*** Brownish yellow, fine to coarse sand with some gravel, subround to round, loose, dry. 3-inch thick yellowish brown silt layer.	NM	0	
8–12	27	NA			NM	0	
12–16	30	NA			NM	0	A sample was collected from 15 feet from U-6 for VOC and metal analyses and from 15.5 to 16 feet for radiological analysis.
16–20	28	NA			NM	0	A sample was collected from 19.5-20 feet from U-6B for radiological analysis.
20–25				Borehole U-6 was advanced to 16 feet on 10/10/02. Borehole U-6B was advanced from 16 to 20 feet on 10/16/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/11/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-7

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	45	NA		***Sand (SW)*** Asphalt surface overlying dark greyish brown, fine to coarse sand. ***Silt (ML)*** Very dark brown silt, organics. Grades with sand and gravel.	NM	0	Samples collected from 0.5-1.5' for radiological analyses and 2 feet for metals. Sample collected from 2-2.5' for VOC analysis.
4–8	45	NA		***Sand (SW)*** Brownish yellow, fine to coarse sand with some gravel.	NM	0	Samples collected from 7.5' for metal analysis and 7.5-8 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/11/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/12/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-8

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	48	NA		***Sand (SW)*** Asphalt surface overlying dark grey fine to coarse sand with some gravel, subround to round, loose, moist. ***Silt (ML)*** Dark brown to black silt with some fine to coarse sand and gravel, subround to round, moist.	NM	NM	Samples collected from 1-1.5' for Radiological analysis.
4-8	40	NA		***Sand (SW)*** Brown fine to coarse sand with some gravel, subround to round, moist to dry. 6-inch silt layer at approximately 6 feet bgs, wet.	NM	NM	Sample collected from 4' for metals and VOC analysis.
8-12	34	NA			NM	NM	
12-16	40	NA			NM	NM	Samples collected from 15-15.5 feet for radiological analysis, and from 15.5-16' for VOC analysis.
16-25				Borehole was completed at 16 feet on 10/12/02. Groundwater was encountered at approximately 6 feet during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/11/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-9/9B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	48	NA		***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand with some gravel, subround to round, loose, moist. ***Silt (ML)*** Dark brown silt with little fine to medium sand, dense, dry.	NM	0	Sample collected from 1-1.5 feet for radiological analysis and 2 feet for metals analysis.
4-8	38	NA		***Sand (SW)*** Brownish yellow fine to coarse sand with some gravel, subround to round, loose, dry. 8-inch interbedded silt layer.	NM	2	
8-12	22	NA			NM	0	
12-16	18	NA			NM	0	Sample collected from 16 feet for VOC analysis.
16-20	30	NA			NM	0	Sample collected from 19.5-20 feet for radiological analysis.
20-25				Borehole U-9 was advanced to 16 feet on 10/11/02. Borehole U-9B was advanced from 16 to 20 feet on 10/16/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/11/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-11

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	37	NA		***Sand (SW)*** Asphalt surface overlying dark grey, fine to coarse sand with gravel, subangular to round, loose, dry. ***Silt (ML)*** Dark brown silt with little fine to coarse sand, medium dense, moist.	NM	NM	Sample collected from 2.5-3 feet for radiological analysis. Sample collected from 4 feet for VOC analysis.
4-8	44	NA		***Sand (SW)*** Brown fine to coarse sand with some gravel, subround to round, loose, dry. Grades to yellowish red to brown.	NM	4.4	Sample collected forn 7.5-8 feet for radiological analysis.
8-12	34	NA		***Silt (ML)*** Brown silt with some fine to coarse sand and gravel, subround to round, moist. ***Sand (SW)*** Light brown to yellowish red, fine to coarse sand, subround to round, loose, dry.	NM	1.4	
12-16	42	NA			NM	1	
16-25				Borehole was completed at 16 feet on 10/11/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007

Project: Soil Borings Fall 2002

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 10/16/02

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-12

URS

1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	31	NA		***Sand (SW)*** Dark grey and brown, fine to coarse sand with trace gravel, angular to round, loose, dry. Grades to brown, with trace gravel and some silt, subround to round. Grades to brownish yellow.	NM	0	Sample collected from 2-3 feet for radiological analysis.
4-8	35	NA			NM	0	Sample collected from 7.5-8 feet for VOC analysis.
8-12	33	NA			NM	0	
12-16	32	NA			NM	0	Sample collected from 15-16 feet for radiological analysis.
16-25				Borehole was completed at 16 feet on 10/16/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/16/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-13

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	17	NA		***Sand (SW)*** Dark greyish brown, fine to coarse sand with some silt and gravel, angular to round, loose, dry. Grades to light grey and brownish yellow, some gravel, subround to round.	NM	0	Sample collected from 1-2 feet for radiological analysis.
4-8	42	NA			NM	0	
8-12	36	NA		***Silt (ML)*** Light grey to brown silt with trace fine sand and gravel, subround to round, medium dense, wet. ***Sand (SW)*** Brownish yellow fine to coarse sand with some gravel, subround to round, loose, dry.	NM	0	Sample collected from 8.5-9 feet for VOC analysis.
12-16	33	NA			NM	0	Sample collected from 15.5-16 feet for radiological analysis.
16-25				Borehole was completed at 16 feet on 10/16/02. Groundwater was encountered at approximately 8 feet during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/16/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-14

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	31	NA		***Sand (SW)*** Dark grey fine to coarse sand with some gravel and silt, subround to round, loose, wet. ***Silt (ML)*** Dark brown silt with trace fine sand, dense, dry.	NM	NR	NR = not recorded Sample collected from 1.5-2.5 feet for radiological analysis, and 2-2.5 feet for VOC analysis.
4-8	44	NA		***Sand (SW)*** Brownish yellow, fine to coarse sand with some gravel, subround to round, loose, dry.	NM	NR	
8-12	41	NA			NM	NR	
12-16	39	NA			NM	NR	Sample collected from 19-20 feet for radiological analysis.
16-25				Borehole was completed at 16 feet on 10/16/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/8/02
Sampler Type: 2-inch x 2-foot split spoon sampler

Log of Boring: U-15

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1	15	27		***Sand (SP)*** Six inches of asphalt and road base overlying brown, fine sand and gravel, trace brick fragments, medium dense, dry (Fill).	0	0	
3	10	24			0	0	
5	12	9		***Sand (SP)*** Light grey, medium sand with silt, loose, moist (Native).	0	0	
7	12	22		Grades to light orange, medium sand with trace fine gravel, medium dense, dry. Grades to orangish brown trace fine gravel, dry.	0	0	
9	16	74		***Sand (SW)*** Light brown medium sand with fine gravel, very dense, round, dry.	0	0	Sample collected from 8-10 feet for radiological analysis.
11	10	26		Grades to medium dense.	0	0	
13	2	53		Grades to very dense.	0	0	
15	11	55			0	0	Sample collected from 14-16 feet for metals and Nickel analysis.
17	14	54			0	0	
19	13	35		Grades to dense.	0	0	Sample collected from 18-20 feet for radiological analysis.
21	15	32			0	0	
23	15	51		Grades to very dense.	0	0	
25	18	58			0	0	

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/8/02
Sampler Type: 2-inch x 2-foot split spoon sampler

Log of Boring: U-15

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26							
27	11	46		Grades to moist.	0	0	
29	18	48			0	0	
31	16	81			0	0	
33	15	39		Grades to dense.	0	0	
35	11	34			0	0	
37	11	33			0	0	
39	18	51			0	0	Sample collected from 38-40 feet for VOC analysis.
40–50				Borehole was completed at 40 feet on 10/8/02. Groundwater was not encountered during drilling			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/8/02, 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-16A/16D

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	45	NA		***Sand (SW)*** Asphalt surface and subbase overlying dark grey to brown, fine to coarse sand with some gravel, subangular to round, wood chips, loose, dry (Fill).	NM	0	Sample collected from 3.5-6.5 feet from U-16A for radiological analysis.
4-8	41	NA		***Silt (ML)*** Brownish yellow silt with trace gravel and sand, subround to round, medium, dense, moist (Native).	NM	0	
8-12	35	NA		***Sand (SW)*** Brown, fine to coarse sand with some gravel, subround to round, intermittent silt lens, moist. Grades to brownish yellow with some gravel.	NM	0	
12-16	35	NA			NM	0	Sample collected from 15.5 feet from U-16A for radiological, metals, and Nickel analysis, and from 15.5-18.5 feet for VOC analysis.
16-20	33	NA			NM	0	Sample collected from 19.5-20 feet from U-16D for radiological analysis.
20-25				Borehole U-16A was completed at 16 feet on 10/18/02. Borehole U-16D was advanced from 16 to 20 feet on 10/18/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-17

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	17	NA		***Sand (SW)*** Dark grey fine to coarse sand with some gravel and some silt, angular to round, loose, moist (Fill). Grades to brown, subround to round.	NM	0	
4–8	26	NA		Grades to brownish yellow. ***Clay (CL)*** Brownish yellow clay, soft, wet (Native). ***Sand (SW)*** Brownish yellow to black, fine to coarse sand with some gravel, subround to round, medium dense, moist.	NM	0	Sample collected from 7-8 feet for radiological analysis.
8–12	35	NA		Grades to brownish yellow, loose, dry.	NM	0	
12–16	33	NA			NM	0	Sample collected from 16 feet for metals and Nickel analysis.
16–20	35	NA			NM	0	Sample collected from 19-19.5 feet for VOC analysis, and from 19.5-20 feet for radiological analysis.
20–25				Borehole was completed at 18 feet on 10/18/02. Groundwater was encountered at approximately 5.25 feet during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/17/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-18

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	25	NA		***Sand (SW)*** Dark grey brown, fine to coarse sand with some silt and gravel, angular to round, medium dense, wet (Fill). Grades to dark brown, subround to round.	NM	0	Sample collected from 2.5-3 feet for radiological analysis.
4-8	25	NA		Piece of slag present - (Fill). ***Sand (SW)*** Brownish yellow, fine to course sand, some gravel, subround to round, loose, dry (Native).	NM	0	
8-12	27	NA			NM	0	
12-16	31	NA			NM	0	Sample collected from 16 feet for metals analysis.
16-20	32	NA			NM	0	Sample collected from 19-19.5 feet for metals, Nickel, and VOC analysis, and from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/17/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-19/19B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	37	NA	SW	***Sand (SW)*** Dark greyish, fine to coarse sand with some gravel, angular to round, loose, dry (Fill). Grades to dark brown with some gravel, subround to round, trace metal and concrete fragments, medium dense, dry.	NM	0	Sample collected from 2-3.5 for radiological analysis.
4-8	33	NA	ML / SW	***Silt (ML)*** Brownish yellow silt with trace gravel, medium dense, dry (Native). ***Sand (SW)*** Brown to brownish yellow, fine to coarse sand, subround to round, loose, dry.	NM	0	
8-12	32	NA	SW		NM	0	
12-16	37	NA	SW		NM	0	
16-20	32	NA	SW		NM	0	Sample collected from 18 feet for metals and Nickel analysis, from 18.5-19 feet for VOC analysis, and from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/18/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/8/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-20

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	32	NA		***Sand (SW)*** Asphalt surface and road base overlying brownish yellow, fine to coarse sand with some gravel, subround to round, loose, dry. ***Silt (ML)*** Brownish yellow silt with little gravel and fine sand, subround to round, medium dense, wet.	NM	0	Sample collected at 2.5-3 feet for radiological analysis.
4-8	45	NA		***Sand (SW)*** Brownish yellow, fine to coarse sand with some gravel, subround to round, loose, dry grading to moist.	NM	0	
8-12	41	NA		***Silt Layer (ML)*** ***Sand (SW)*** Brownish yellow fine to coarse sand with some gravel, subround to round, loose, dry. ***Silt Layer (ML)***	NM	0	
12-16	43	NA		***Sand (SW)*** Brownish yellow fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	
16-20	43	NA			NM	0	Sample collected at 19.5 feet for radiological, metals, and Nickel analysis, and 19.5-19.8 feet for VOC analysis.
20-25				Borehole was completed at 20 feet on 10/18/02. Groundwater was encountered at approximately 2 feet during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-21

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	34	NA		***Sand (SW)*** Brown, fine to coarse sand with some gravel and trace silt, loose, dry grading to moist. Black slag-like material (Fill). Dark brown silt with trace sand, dense, dry.	NM	0	Sample collected from 1.5-2 feet for radiological analysis.
4-8	36	NA		***Silt (ML)*** (7-8) Dark grey silt, moist (Native).	NM	0	
8-12	30	NA		***Sand (SW)*** Brown, fine to coarse sand with some fine to coarse gravel, some silt, loose, dry. ***Silt (ML)*** Dark grey, some fine sand, medium dense, wet.	NM	0	
12-16	34	NA		***Sand (SW)*** Yellowish red to brown, fine to coarse sand with some gravel, loose, dry.	NM	0	
16-20	32	NA			NM	0	Sample collected from 16-16.5 feet for VOC analysis, from 17-17.5 feet for Metals and Nickel analysis, and from 18-20 feet for radiological analysis.
20-25				Boring was completed at 20 feet on 10/19/02. Groundwater was encounetered at 10 feet during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/8/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-22

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	40	NA		***Sand (SW)*** Asphalt surface and road base overlying brownish yellow, fine to coarse sand with some gravel, subround to round, loose, dry. Grades to brown, fine to medium sand, subround to round, loose, dry.	NM	0	Sample collected from 2-2.5 feet for radiological analysis.
4-8	38	NA		Grades to brownish yellow fine to coarse sand, some gravel, loose, moist.	NM	0	Sample collected from 7.5 feet for metals, Nickel, and VOC analysis, and from 7.5-7.8 feet for radiological analysis.
8-25				Borehole was completed at 8 feet on 10/8/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/12/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-23

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	38	NA		***Sandy Silt (ML)*** Asphalt surface overlying dark brown silt with sand some gravel, subround to round, medium dense, dry. ***Silt (ML)*** Dark brown to black silt with some gravel, subround to round, medium dense, moist.	NM	28*	Sample collected from 2.5 feet for VOC analysis.
4–8	40	NA		Grades to brown silt, wet.	NM	NR	
8–12	22	NA		***Sand (SW)*** Brown, fine to coarse sand with some gravel, subround to round, loose, dry.	NM	NR	Sample collected from 11 feet for VOC analysis and 11.5-12 feet for radiological analysis.
12–25				Borehole was completed at 12 feet on 10/12/02. Groundwater was not encountered during drilling. * = PID readings were measured throughout boring. The highest reading was 28 ppm at 2.5 feet.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/13/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-24

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand, little gravel, trace silt, angular to round, loose, dry. Grades to dark brown to brownish yellow, some gravel, little silt, subround to round.		4	
2	32	NA			NM	5	Sample collected from 2.5-3 feet for radiological analysis.
3						7	
4				***Silt (ML)*** Silt, loose, dry.		10.3	
5				***Sand (SW)*** Yellowish brown fine to medium sand, little gravel.		0	Sample collected from 5.5-6 feet for VOC analysis.
6	37	NA			NM	3	
7				***Silt (ML)*** Light yellowish brown silt, trace fine sand and gravel, subround to round, dense, moist.		6	
8						1	
9				***Sand (SW)*** Brownish yellow fine to coarse sand, some gravel, subround to round, loose, dry.		5	
10	40	NA			NM	0	Sample collected from 11.5-12 feet for VOC and radiological analysis.
11						2	
						1	
12							
13				Borehole was completed at 12 feet on 10/13/02. Groundwater was not encountered during drilling.			
14							
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22							
23							
24							
25							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/12/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-25

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	34	NA		***Sand and Silt (SM)*** Asphalt surface overlying dark brown fine to coarse sand and silt, some gravel, subround to round, loose, moist. Schist fragment at approximately 2.5' bgs.	NM	NR	Sample collected from 2-2.5 feet for radiological analysis.
				Silt (ML) Dark brown silt, little gravel, some fine to coarse sand, subround to round, medium dense, moist. Grades to brown, some gravel and little sand.			
4-8	36	NA		***Sand (SW)*** Brown fine to coarse sand, little gravel, subround to round, loose, dry. Grades to some gravel, little silt.	NM	53.8	Sample collected from 7.5 feet for VOC analysis.
8-12	39	NA		***Sand and Gravel (SW-GW)*** Fine to coarse sand and gravel, loose, dry.	NM	34.4	Sample collected from 10.5 feet for VOC analysis, and from 11.5-12 feet for radiological analysis.
12-25				Borehole was completed at 12 feet on 10/12/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/12/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-26

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	40	NA		***Silt (ML)*** Asphalt surface overlying dark brown silt, some fine to coarse sand and gravel, subround to round, dry.	NM		NR = not recorded
				Sand and Gravel (SW-GW) Dark brown fine to coarse sand and gravel, grades with silt, subround to round, loose, medium dense, dry.		29.4*	Sample collected from 3-4 feet for radiological analysis, and 3.5 feet for VOC analysis.
4–8	40	NA		***Sand (SW)*** Brown fine to coarse sand, some gravel, little silt, subround to round, moist.	NM	NR	
				Sand and Gravel (SW-GW) Pinkish grey to light brown fine to coarse sand and gravel, loose, dry.			
8–12	34	NA		***Sand (SW)*** Brown fine to coarse sand, little gravel and silt, subround to round, medium dense, moist.	NM	NR	Sample collected from 11.5-12 feet for radiological analysis.
12–25				Borehole was completed at 12 feet on 10/1202. Groundwater was not encountered during drilling. * = PID readings were measured throughout the boring. The highest PID reading of 29.4 ppm was recorded at 3.5 feet.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/13/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-27/27B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	28	NA		***Sand (SW)*** 6" concrete surface overlying 3" of wood overlying brown fine to coarse sand, some gravel, subround to round, loose, dry (Fill). ***Silt (ML)*** Brown silt, little organics, medium dense, dry.	NM	0.5	Sample collected from 2-2.5 feet for radiological analysis.
4-8	44	NA		***Sand (SW)*** Brown fine to coarse sand, little gravel, subround to round, loose, dry. Grades to yellowish brown with some gravel.	NM	6	Sample collected from 6-6.5 feet for VOC analysis.
8-10	12	NA			NM	0.7	
10-12	18	NA			NM	2	Sample collected from 11.5-12 feet for radiological analysis.
12-25				Borehole U-27 was completed at 12 feet on 10/13/02. Borehole was re-drilled (U-27B) to re-sample 8-12 feet on 10/13/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/12/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-28

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	32	NA		***Sand (SW)*** Concrete surface overlying dark brown fine to coarse sand, little gravel, loose, dry. ***Silt (ML)*** Dark brown silt, little fine to medium gravel, subround to round, medium dense, dry.	NM	2.3*	Sample collected from 1.5-2 feet for radiological analysis.
4–8	32	NA		***Sand (SW)*** Brown fine to coarse sand, some gravel, subround to round, loose, dry. Grades to light brown at approximately 4' bgs.	NM	NR	Sample collected from 7-7.5 feet for VOC analysis, and 7.5-8 feet for radiological analysis.

Borehole was completed at 8 feet on 10/12/02.
Groundwater was not encountered during drilling.

* PID readings were measured throughout the boring. The highest PID reading of 2.3 ppm was recorded at 2 feet bgs.

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/12/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-29

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	42	NA	ML	***Silt (ML)*** Concrete surface overlying dark brown silt, little gravel, subround to round, medium dense, moist. Grades to brown at approximately 2 feet.	NM	NR	Sample collected from 1-1.5 feet for radiological analysis.
			SW	***Sand (SW)*** Strong brown with some fine to coarse gravel, subround to round, loose, dry.			Sample collected from 4 feet for VOC analysis.
4–8	42	NA	SW	Grades to light brown to pinkish grey at approximately 4 feet. Grades to dark brown at approximately 6.5 feet.	NM	NR; 8*	Sample collected from 7 feet for VOC analysis, and 7.5-8 feet for radiological analysis.
8–12	14	NA	SW		NM	2.9; 0.7	

Borehole was completed at 12 feet on 10/12/02.
Groundwater was not encountered during drilling.

* PID readings were measured throuhgout the boring. The highest PID reading of 8 ppm was recorded at 7-7.5 feet bgs.

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/12/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-30

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	34	NA		***Sand (SW)*** Concrete surface overlying dark brown fine to coarse sand, some gravel, little silt, subround to round, loose, dry. ***Silt (ML)*** Dark brown silt grading to yellow, little gravel and sand, subround to round, loose, dry.	NM	5.8	Sample collected from 1.5-2 feet for metals analysis, 2.5-3 feet for radiological analysis, and 3 feet for VOC analysis.
4-8	42	NA		***Sand (SW)*** Brown grading to light brown fine to coarse sand, some gravel, subround to round, loose, dry. Schist fragments at approximately 4.25 feet.	NM	NR	Sample collected from 7.5-8 feet for radiological analysis.
8-25				Borehole was completed at 8 feet on 10/12/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/8/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-31/31B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	39	NA		***Sand (SW)*** Asphalt surface overlying dark brown fine to coarse sand, little silt and gravel, subangular to round, loose, moist (Fill). Grades to brownish yellow with some gravel.	4.3	0	Collected sample from 3.8-4 feet for VOC analysis.
4-8	18	NA		Grades to very dark greyish brown.	NM	0	
8-12	26	NA		Concrete at approximately 7.8' bgs. Slag and concrete - (Fill) ***Sand (SW)*** Brownish yellow fine to coarse sand, some gravel, subround to round, loose, moist (Native)	NM	0	Collected sample from 11.5 feet for radiological, metals, and Nickel analyses.
12-16	32	NA		Wet silt lens at 11.5' bgs.	NM	0	
16-20	24	NA		Refusal at 16 feet in borehole U-31.	NM	0	Collected sample from 19.5-20 feet from U-31B for radiological analysis.
20-25				Borehole U-31 was completed at 16 feet on 10/8/02 due to refusal. Borehole U-31B was sampled from 16 to 20 feet on 10/8/02. Groundwater was encountered at 11.5' during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-32

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	34	NA		***Sand and Gravel (SW-GW)*** Light grey to grey, fine to coarse sand, subround to round, dry. ***Sand (SW)*** Brown fine to coarse sand, little gravel, subround to round, dry.	NM	2.5	Sample collected from 2.5-3 feet for radiological analysis, and 3.5 feet for VOC analysis.
4-8	44	NA		Grades to pinkish grey. Grades to brown with little gravel.	NM	0	
8-12	35	NA			NM	0	Sample collected from 11.5-12 feet for metals and Nickel analysis.
12-16	33	NA			NM	0	
16-20	24	NA			NM	0	Sample collected from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/9/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-33

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	30	NA		***Sand (SW)*** Dark brown fine to medium sand, trace gravel and organics, some silit, subround to round, loose, dry. Grades to yellowish brown fine to coarse sand, little gravel, subround to round, loose, dry.	NM	1.2	NR = not recorded Sample collected from 1.5-2.5 for radiological analysis. Sample collected from 4 feet for VOC analysis.
4-8	38	NA		***Silt (ML)*** Greenish grey silt, trace gravel, little fine sand, subround to round, medium dense, dry. ***Sand (SW)*** Yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	NR	
8-12	37	NA			NM	NR	Sample collected from 12 feet for metals and Nickel analysis.
12-16	24	NA			NM	NR	
16-25				Borehole refusal at 16 feet on 10/9/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-33B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–16				(See borehole log U-33 for the soil description prior to 16' bgs.)			
16–20	23	NA		***Sand (SW)*** Yellowish brown to brown fine to coarse sand, little to some gravel, angular to round, loose, dry.	NM	0	Sample collected from 19.5-20 feet for radiological analysis.
20–25				Borehole was advanced from 16 to 20 feet on 10/9/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-34

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	27	NA		***Silt (ML)*** Dark brown silt, little gravel, subangular to subround, loose, dry. ***Sand (SW)*** Greyish brown fine to coarse sand, little gravel, angular to round, loose, dry. Grades to dark brown to brownish yellow at approximately 2.75' bgs. Grades to yellowish brown at approximately 4.5' bgs.	NM	0	Sample collected from 3-3.5 feet for radiological analysis.
4-8	35	NA			NM	0	
8-12	26	NA			NM	0	
12-16	25	NA			NM	0	
16-20	18	NA			NM	0	Sample collected from 18.5-19 feet for VOC analysis, and from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/14/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-35B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1, 2, 3, 4	39	NA	ML / SW	***Silt (ML)*** Asphalt surface overlying brown to yellow orange silt, trace fine sand, roots. ***Sand (SW)*** Yellow orange fine to medium sand, some gravel, subround, moist.	0	4.8	NR = not recorded. Sample collected from 3.5 feet for VOC analysis.
5, 6, 7, 8	45	NA	SW	Grades to no gravel at approximately 5.75' bgs. Grades to little gravel at approximately 6.25' bgs.	0	NR	
9, 10, 11, 12	45	NA	SW	Grades to fine to coarse sand with gravel and trace silt at approximately 8' bgs, subangular, moist.	0	NR	Sample collected from 12 feet for metals and Nickel analysis, and 12-12.5 feet for radiological analysis.
13, 14, 15, 16	34	NA	SW	Grades to dark yellow orange, fine to coarse sand and gravel at approximately 14.6' bgs.	0	NR	
17, 18, 19, 20	33	NA	SW		0	NR	Sample collected from 19-20 feet for radiological analysis.
21, 22, 23, 24, 25				Borehole completed at 20 feet on 10/9/02. Groundwater was not encountered during drilling.			

Logged by: P. Cox

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/8/02
Sampler Type: 2-inch x 2-foot split spoon sampler

Log of Boring: U-36

URS

1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-2	18	25	ML	***Silt (ML)*** Asphalt surface overlying dark brown silt, some fine gravel, round, very stiff, (Fill).	0	0	NR = not recorded. Sample collected from 2-4 feet for metal and Nickel analyes.
2-4	14	44	SP	***Sand (SP)*** Light brown, fine sand with little coarse gravel, rounded, dense, dry.	0	0	
4-6	18	57	SP	Grades to very dense.	0	0	
6-8	15	94	SP	Grades with some fine to coarse gravel, round, dry.	0	0	
8-10	18	37	SP	Grades to orangish brown medium sand, dense, dry.	28	NR	
10-12	16	39	SP		27	0	Sample collected from 10-12 feet for metals analysis.
12-14	15	44	SP	Grades to brown.	32	0	Sample collected from 12-14 feet for VOC analysis.
14-16	17	30	SP		0.4	0	Sample collected from 14-16 feet for radiological analysis.
16-18	14	33	SP		0.3	0	
18-20	9	31	SP	Grades with reddish brown layer at 17.7. Grades with little fine gravel, round.	0.6	0	Sample collected from 18-22 feet for radiological analysis.
20-22	13	18	SP	Grades to medium dense, moist.	0	0	
22-24	15	24	SP	Grades to dry.	0.7	0	
24-25	11	52	SP	Grades to orangish brown, very dense, moist.	1	0	

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/8/02
Sampler Type: 2-inch x 2-foot split spoon sampler

Log of Boring: U-36

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26-28	17	37		Grades to dense.	1.4	0	
28-30	18	36		Grades to light brown.	0	0	
30-32	17	33			0	0	
32-34	12	34		Grades with brown laminations at 33.2-33.5'.	0	0	
34-36	20	43		Grades to light brown, medium sand, some coarse gravel, round.	0	0	
36-38	18	31			0	0	
38-40	18	39		Grades to fine sand, trace coarse, round gravel.	0	0	Sample collected from 38-40 feet for radiological analysis.
40-50				Borehole was completed at 40 feet on 10/8/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007

Project: Soil Borings Fall 2002

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 10/15/02

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-37

URS

1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	22	NA		***Topsoil*** Very dark brown to black fine sand and silt, grass, roots, loose, dry. ***Sand (SW)*** Dark greyish brown fine to coarse sand, little gravel, traace silt, angular to round, loose, dry.	NM	0	Sample collected from 3-3.5 feet for radiological analysis.
4–8	41	NA		***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry. Grades to dark brown, medium dense, moist.	NM	0	
8–12	27	NA		***Silt (ML)*** Dark brown silt, trace gravel and fine sand, subround to round, medium dense, moist. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	
12–16	26	NA		Grades to dark brown to black with some gravel. Grades to yellowish brown.	NM	0	Sample collected from 16-16.5 feet for metals and Nickel analysis.
16–20	18	NA			NM	0.6	Sample collected from 18.5-19 feet for VOC analysis and 19.5-20 feet for radiological analysis.
20–25				Borehole was completed at 20 feet on 10/15/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/8/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-38

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	43	NA	ML / SW	***Silt (ML)*** Dark brown silt, trace fine sand and organics, loose, moist. Grades to brownish yellow, trace gravel, subangular. ***Sand (SW)*** Yellow fine to coarse sand, some gravel, subround to round, loose, dry.	2.5	0	Sample collected from 2.8-3 feet for VOC analysis.
4-8	42	NA	SW		NM	0	
8-10	24	NA	SW	Moist at 7.5' bgs.	NM	3.1	
10-12	24	NA	SW	Weathered schist fragment.	NM	0	
12-14	24	NA	SW		NM	0	
14-16	24	NA	SW		NM	5.6	
16-18	24	NA	SW		NM	0	
18-20	24	NA	SW		NM	0	Sample collected from 19 feet for metal, Nickel and radiological analyses.
20-25				Borehole was completed at 20 feet on 10/8/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-39

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	42	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, little gravel, angular to round, loose, dry. Grades to brownish yellow, subround to round. ***Silt (ML)*** Dark brown grading to yellowish brown silt, trace fine sand and organics, medium dense, moist.	NM	0	Sample collected from 1.5 feet for radiological analysis. Sample collected from 4 feet for VOC analysis.
4–8	42	NA		***Sand (SW)*** Brownish yellow to yellowish brown with some gravel, subround to round, fine to coarse, loose, dry.	NM	0	Sample collected from 7.5-8 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/10/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/15/02-10/16/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-40

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1 2 3 4	30	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, some gravel, little silt, angular to round, loose, dry. Grades to brownish yellow to yellowish brown, subround to round.	NM	0.7 0.9 0.1 1.1	NR = not recorded Sample collected from 2.5-4 feet for radiological analysis.
5 6 7 8	38	NA				0 1.3 1.7 2.1	
9 10 11 12	38	NA			NM	2.1 3.7 3.2 4.3	Sample collected from 11.5-12 feet for VOC analysis.
13 14 15 16	42	NA			NM	NR	
17 18 19 20	42	NA			NM	NR	Sample collected from 19.5-20 feet for radiological analysis.
21 22 23 24 25				Borehole was completed at 20 feet on 10/16/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/15/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-41

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	40	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, some gravel, angular to round, loose, dry. Grades to light grey medium to coarse sand, little fine sand, angular to subangular.	NM	NR 2.1 2.7 0.9	NR = not recorded Sample collected from 2.5-3 feet for radiological analysis, and 3.5-3.8 feet for VOC analyses.
4-8	35	NA		***Sand and Gravel (SW-GW)*** Dark brown fine to coarse sand and gravel, little concrete, subround to round gravel (Fill). ***Silt (ML)*** Light yellowish brown silt, trace clay, cohesive, medium dense, moist.	NM	0.0 NR	
8-12	30	NA		***Sand (SW)*** Brown to brownish yellow fine to coarse sand, some gravel and little silt, subround to round, loose, dry.	NM	NR	
12-16	35	NA			NM	NR	
16-20	32	NA			NM	NR	Sample collected from 18-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/15/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: 2-inch x 2-foot split spoon sampler

Log of Boring: U-42

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1	15	45		***Sand (SW)*** Brown fine sand, little coarse sand and gravel, with 2" white sand and gravel layer, dense, dry to moist (Fill).	NM	0	Sample collected from 1-2 feet for radiological analysis.
2							
3	22	35			NM	0	
4				***Sand (SW)*** Tan fine to coarse sand, trace to little gravel, medium dense, dry to moist (Native).			
5	17	24			NM	0	
6							
7	12	27			NM	0	
8							
9	11	14			NM	0	
10							
11	13	12			NM	0	
12				Grades with 2.5-inch black layer			
13	11	17			NM	0	
14				Grades to dense.			Sample collected from 14-18 feet for radiological analysis.
15	15	35			NM	0	
16				Grades to orange/tan fine to medium sand, little coarse gravel, medium dense.			
17	13	24			NM	0	
18				Grades reddish.			Sample collected from 18-20 feet for VOC analysis.
19	14	20			NM	0	
20							
21				Borehole was completed at 20' on 10/14/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: S. Chillson

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-43

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	31	NA	SW / ML	***Sand (SW)*** Dark greyish brown sand, some gravel, little silt, angular gravel, subround to round sand, loose, dry. ***Silt (ML)*** Brown silt, little gravel, some fine sand, medium dense, dry.	NM	0.5, 0.1, 0.2, 0.5	Sample collected from 2.5-3 feet for radiological analysis.
4-8	23	NA	SW	Grades to yellow brown with some gravel. ***Sand (SW)*** Yellowish brown fine to coarse sand, little gravel, subround to round, loose, dry.	NM	0.0, 0.1, 0.2	
8-12	21	NA	SW		NM	0.4, 0.1, 0.7	
12-16	28	NA	SW		NM	0.3, 0.1, 0.3	
16-20	25	NA	SW		NM	0.1, 0.0, 0.3	Sample collected from 18.5-19 feet for Metals and VOC analysis, and from 19-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/29/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-44

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	39	NA		***Sand (SW)*** Asphalt surface overlying dark grey/brown fine to coarse sand, with yellow brown mottling, some gravel, little silt, trace slag, subround to round gravel, fine to coarse, loose, dry (Fill).	NM	0.5, 0.3, 0.2, 1.1	Sample collected from 3-4 feet for radiological analysis.
4-8	29	NA		Grades to some silt.	NM	0.7, 0.5, 0.8, 1.0	
8-12	6	NA			NM	0.0, 0.0, 0.0, 0.8	
12-16	27	NA		Grades to yellow brown with some yellow and grey gravel.	NM	2.3, 0.4, 0.4, 0.4	
16-20	33	NA			NM	2.4, 0.1, 0.3, 0.5	Sample collected from 17-17.5 feet for metals and VOC analysis. Sample collected from 19-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/29/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/15/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-46

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	29	NA		***Sand (SW)*** Dark brown fine sand, trace gravel, some silt, subangular to round, organics, loose, dry. Grades to dark greyish brown to brownish yellow with some gravel, subround to round, fine to coarse.	NM	0	Sample collected from 2.5-3 feet for radiological analysis.
4-8	34	NA		Grades to brownish yellow to yellowish brown.	NM	0	
8-12	34	NA			NM	0	
12-16	33	NA			NM	0	
16-20	19	NA			NM	0	Sample collected from 19-19.5 feet for metals, Nickel, and VOC analysis, and from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/15/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/17/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-47

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	24	NA		***Sand (SW)*** Dark greyish brown sand, little gravel, trace silt, angular to round, medium dense, wet. Grades to brown to dark brown fine to coarse sand, with some gravel and little silt, subround to round, wet.	NM	0	
4-8	32	NA			NM	0	Sample collected from 6-7 feet for radiological analysis.
8-12	35	NA		Grades to brownish yellow to yellowish brown, loose, dry.	NM	0	
12-16	35	NA			NM	0	Sample collected from 15.5-16 feet for metals analysis, and 16 feet for VOC analysis.
16-20	33	NA			NM	0	Sample collected from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/17/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-48A

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1–2	22	NA		***Sand (SW)*** Asphalt overlying brown fine to coarse sand, some gravel, trace asphalt debris, subround to round, loose, dry (Fill).	NM	0	Sample collected from 6-12" and 1.5-2.5' for radiological analysis.
3–25				Borehole was completed at 2.5 feet on 10/10/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-48B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	40	NA		***Sand (SW)*** Brown fine to coarse sand, little gravel, subround to round, loose, dry. Slag encountered approximately 14" bgs (Fill). Schist fragment encountered approximately 2' bgs. Grades to greenish grey.	NM	10.9, 10.3, 3.9, 0.7	Sample collected from 0.5-1 feet for radiological and VOC analysis.
4–8	NR	NA		***Silt (ML)*** Silt, some gravel, trace fine sand, subround to round, medium dense, moist. ***Sand (SW)*** Brown fine to coarse sand, little gravel, subround to round, loose, dry.	NM	0.0, 0.0, 0.0, 0.0	Sample collected from 7.5-8 feet for radiological analysis.

Borehole was completed at 8 feet on 10/10/02.
Groundwater was not encountered during drilling.

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-48C

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-1.5	27	NA		Bentonite backfill material (Fill).	NM	0	
1.5-4				***Sand (SW)*** Brown fine to coarse sand, some gravel, subround to round, loose, dry.			
4-8	40	NA		2" Silty clay layer.	NM	0	Sample collected from 5.5-6 feet for metals and Nickel analysis. Sample collected from 7.5 feet for radiological analysis.
8-25				Borehole was completed at 8 feet on 10/10/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-48D

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	42	NA		***Sand (SW)*** Brown to dark brown fine to coarse sand, some gravel, subround to round, loose, dry. 3" Greenish grey silt layer at approximately 3' bgs with trace clay, medium dense, moist.	NM	0	Sample collected from 0.5-1 feet for radiological analysis.
4-8	37	NA			NM	0	Sample collected from 7.5-8 feet for radiological analysis.
8-25				Borehole was completed at 8 feet on 10/10/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/10/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-48E

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	40	NA		***Sand (SW)*** Asphalt surface overlying brown to dark brown fine to coarse sand, some gravel, subround to round, loose, dry. Schist fragment at approximately 2.7' bgs.	NM	0	Sample collected from 0.5-1 feet for radiological analysis.
4-8	40	NA			NM	0	Sample collected from 7.5-8 feet for radiological analysis.
8-25				Borehole was completed at 8 feet on 10/10/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/28/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-49

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	27	NA		***Sand (SW)*** Dark grey/brown sand, some gravel and silt, angular gravel, subround to round sand, loose, dry. ***Silt (ML)*** Yellow brown silt, little gravel and fine sand, subround to round, medium dense, dry.	NM	0	Sample collected from 2-3 feet for radiological analysis.
4-8	45	NA		***Sand (SW)*** Yellow brown fine to coarse sand with some gravel, subround to round, loose, dry.	NM	0	
8-12	41	NA			NM	0	
12-16	0	NA		No recovery 12-16 feet bgs.	NM	0	
16-20	32	NA			NM	0	Sample collected from 18.5-19 feet for VOC analysis. Sample collected from 19-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/28/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/28/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-50

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	27	NA		***Gravel and Sand (GM-SM)*** Asphalt surface overlying dark grey/brown gravel and sand, some silt, angular gravel, subround to round sand, loose, dry. ***Silt (ML)*** Yellowish brown silt, little gravel and fine sand, subround to round, medium dense, trace roots, dry.	NM	0	NR = not recorded Sample collected from 3-4 feet for radiological analysis.
4-8	41.5	NA		***Sand (SW)*** Yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	
8-12	42	NA			NM	0	
12-16	20	NA			NM	NR	
16-20	36	NA			NM	NR	Sample collected from 18.5-20 feet for radiological analysis, and from 19-19.5 feet for VOC analysis.
20-25				Borehole was completed at 20 feet on 10/28/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/28/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-51

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	23	NA		***Gravel and Sand (GM-SM)*** Asphalt surface overlying dark grey/brown gravel and sand with some silt, angular gravel, fine to medium sand, loose, subbase, dry. ***Sand (SW)*** Yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0.5	Sample collected from 2-3 feet for radiological analysis.
4-8	43	NA			NM	0.0	
8-12	39	NA			NM	0.0	
12-16	42	NA			NM	0.0	
16-20	38	NA			NM	0.0	Sample collected from 18.5-19 feet for VOC analysis, and 19-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/28/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/28/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-52

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	35.5	NA		***Sand (SW)*** Dark grey/brown with little gravel and some silt, angular gravel, subround to round sand, loose, dry. Grades to brown to yellowish brown, some gravel and silt.	NM	0	Sample collected from 1-2 feet for radiological analysis.
4-8	42	NA		***Silt (ML)*** Yellowish brown silt, some gravel and fine to medium sand, subround to round, medium dense, moist. ***Sand (SW)*** Reddish brown to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	
8-12	41	NA			NM	0	
12-16	42	NA			NM	0	
16-20	40	NA			NM	0	Sample collected from 18.5-19 feet for VOC analysis, and from 19-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/28/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/28/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-53

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	20	NA		***Sand (SW)*** Asphalt surface overlying dark grey/brown sand, little gravel and some silt, angular gravel, subround to round sand, loose, dry. Grades to yellowish brown to brown with some gravel and silt, fine to coarse.	NM	0	Sample collected from 2.5-3.5 feet for radiological analysis.
4-8	39	NA		***Silt (ML)*** Yellowish brown silt, medium dense, moist to wet. ***Sand (SW)*** Yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	
8-12	42	NA			NM	0	
12-16	42	NA			NM	0	
16-20	28	NA			NM	0	Sample collected from 18.5-19 feet for VOC ananlysis, and from 19.5 to 20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/28/02. Groundwater was encountered at approximately 4 feet during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-54

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	33	NA		***Sand Fill (SW)*** Asphalt surface overlying dark grey/brown with some yellow brown sand, some gravel and little silt, angular gravel, subround to round sand, loose, dry (Fill).	NM	9.6 (1), 4.1 (2), 7.4 (3), 13.2 (4)	Sample collected from 2.5-3.5 feet for radiological analysis. Sample collected from 3.5-4 feet for VOC analysis.
4-8	38	NA		***Silt (ML)*** Yellowish brown silt layer at approximately 4' bgs, with little fine gravel, dense, moist. ***Sand (SW)*** Yellowish brown sand with gravel, subround to round, loose, dry.	NM	5.1 (5), 1.2 (6), 2 (7.5)	Sample collected from 5-5.5 feet for metal analysis.
8-12	33	NA			NM	2.6 (9), 0.5 (10), 0.3 (11), 0.4 (12)	
12-16	28	NA			NM	1.7 (13), 0.9 (14), 1.5 (15), 0.4 (16)	
16-20	29	NA			NM	1.7 (17), 0.6 (18), 0.5 (19)	Sample collected from 19-19.5 feet for metal analysis, and 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/29/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-55

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1	38	NA	SW	***Sand (SW)*** Dark brown with little gravel and silt, subround to round, fine to coarse, loose, dry.	NM	2.2	Sample collected from 0.5-1.5 feet for radiological analysis.
2			ML	***Silt (ML)*** Dark brown grading to yellow brown with little gravel and fine sand, subround to round, medium dense, dry.		4.5	
3						6.6	
4						7.1	
5	33	NA	SW	***Sand (SW)*** Yellowish brown with some gravel, subround to round, fine to coarse, loose, dry.	NM	2.9	
6						7.3	
7						7.7	Sample collected from 7.5-8 feet for metal analysis.
8						3.3	
9	33	NA			NM	1.7	
10						17.0	
11						9.0	
12						4.7	
13	34	NA			NM	7.1	
14						3.5	
15						8.6	
16						2.3	
17	35	NA			NM	4.7	Sample collected from 17.5-18.5 feet for metal analysis, from 19-19.5 feet for VOC analysis, and from 19.5-20 feet for radiological analysis.
18						6.0	
19						18.7	
20						6.0	
21				Borehole was completed at 20 feet on 10/29/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/17/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-56

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	35	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, little gravel and trace silt, angular to round, loose, dry. Grades to brownish yellow to yellowish brown with some gravel, subround to round.	NM	0	Sample collected from 0-1 feet for radiological analysis.
4-8	36	NA		Grades to brown at approximately 3.8' bgs. Grades to brownish yellow to yellowish brown with some gravel, subround to round, fine to coarse, loose, dry.	NM	0	Sample collected from 4.5-5 feet for metals analysis, and 5.5-6 feet for radiological analysis.
8-12	35	NA		Little silt and wet approximately 8-9' bgs.	NM	0	Sample collected from 10.5-11.5 feet for radiological analysis.
12-16	36	NA			NM	0	
16-20	32	NA			NM	0	Sample collected from 18.5-19 feet for VOC analysis, and from 19-19.5 feet for metals analysis, and from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/17/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/17/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-57

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	42	NA	SW / ML	***Sand (SW)*** Dark greyish brown to black fine to coarse sand, some gravel and little silt, angular to round, loose, dry. Grades to brown to brownish yellow. ***Silt (ML)***	NM	85.6 21.7 42.6	NR = not recorded Sample collected from 0.5-1.5 feet for radiological analysis. Sample collected from 3.5-4 feet for VOC analysis, and 4.5-5 feet for metals analysis.
4-8	39	NA	ML / SW	Brown to light yellowish brown silt with little gravel and fine sand, subround to round, dense, moist. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand with little gravel, subround to round, loose, dry.	NM	207 85 36 126 87.5	
8-12	33	NA	ML / SW	***Silt (ML)*** Brown to light yellowish brown silt, some fine sand, medium dense, wet. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	169 1.4 0.7	
12-16	34	NA	SW		NM	0.4 0.4 0.2	Sample collected from 13.5-14 feet for VOC analysis.
16-20	30	NA	SW		NM	NR	Sample collected from 18.5-19 feet for metals analysis, and 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/17/02. Groundwater was encountered at 8 feet during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/11/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-58

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	32	NA		***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand, little gravel, subround to round, loose, dry. Grades to yellowish brown with some gravel and little silt.	NM	0	Sample collected from 2.5-3 feet for radiological analysis, and 4.5 feet for VOC analysis.
4–8	42	NA		Grades to brownish yellow with little gravel. Grades to brown.	NM	0	Sample collected from 7.5-8 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/11/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/11/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-59

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	36	NA		***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand, little gravel, angular to round, loose, dry. ***Silt (ML)*** Dark brown silt, trace fine sand, medium dense, organics, moist.	NM	0	Sample collected from 0.5-1.5 feet and 1.5-2.5 feet for radiological analysis, and 2.5 feet for metals analysis, and 3.5 feet for VOC analysis.
4-8	42	NA		Grades to yellowish brown with little gravel, subround to round. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	Sample collected from 7.5-8 feet for radiological analysis.
8-25				Borehole was completed at 8 feet on 10/11/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/12/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-63

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-1				***Sand (SW)*** Dark grey fine to coarse sand, some silt, dry.			
1-4	42	NA		***Silt (ML)*** Dark brown to black silt, little sand, medium dense, moist. Grades to brown with some gravel.	NM	0	Sample collected from 1-1.5 feet for radiological analsysis.
4-7	42	NA		***Sand (SW)*** Strong brown with little gravel, subround to round, fine to coarse, moist.	NM	0	Sample collected from 7.5-8 feet for radiological analsysis, and 8 feet for VOC analysis.
7-8				***Silt (ML)*** Brown silt, little gravel, trace clay, dense, moist.			

Borehole was completed at 8 feet on 10/12/02.
Groundwater was not encountered during drilling.

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/13/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-64

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	NR	NA	SW / ML	***Sand (SW)*** Asphalt surface overlying dark greyish brown grading to brownish yellow fine to coarse sand, little to some gravel, subangular to round, fine to coarse, loose, dry. ***Silt (ML)*** Dark brown silt, trace fine sand and organics, moist.	NM	12 (1), 10 (2), 6 (3), 29 (4)	Sample collected from 2.5-3 feet for radiological analysis.
4–8	NR	NA	SW / ML / SW	***Sand (SW)*** Yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry. ***Silt (ML)*** Light yellowish brown silt, trace fine sand and clay, wet.	NM	40 (5), 6 (7), 20 (8)	Sample collected from 5.5-6 feet for VOC analysis.
8–12	NR	NA	SW	***Sand (SW)*** Brownish yellow to yellowish brown sand, some gravel, subround to round, loose, dry.	NM	6 (10)	Sample collected from 11.5-12 feet for VOC and radiological analysis.
12–25				Borehole was completed at 12 feet on 10/13/02. Groundwater was encountered at approximately 5.5 feet during drilling.			

Logged by: C. McMahon

Project No:, 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/13/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-65A

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1	43	NA		Asphalt surface overlying subbase sand and gravel overlying concrete. Drilling refusal at 2 feet in concrete.	NM	NA	No samples collected for analysis.
2							
3				Drilling refusal at 2 feet.			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/13/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-65B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–1.4	43	NA		Asphalt surface overlying subbase sand and gravel overlying concrete.	NM	3	Sample collected from 1.5-2 feet for VOC analysis, and 2.5-3 feet for radiological analysis.
1.4–3				***Sand (SW)*** Brownish yellow fine to coarse sand, some gravel, subangular to subround, loose, dry.		6	
3–4				***Silt (ML)*** Dark brown silt, trace fine sand and organics, medium dense, moist.		30	
4						23	
4–6	38	NA		***Sand (SW)*** Brownish yellow fine to coarse sand, little gravel, subround to round, loose, moist.	NM	17	Sample collected from 6 feet for VOC analysis.
6–7				***Silt (ML)*** Brownish yellow silt, trace gravel and fine sand, subround to round, dense, moist.		19	
7						4	
8						9	
7–12	36	NA		***Sand (SW)*** Brownish yellow to yellowish brown sand, some gravel and intermittent silt layers, subround to round, loose, dry.	NM	11	
10						10	
11						8	Sample collected from 11.5-12 feet for radiological analysis.
12–20				Borehole was completed at 12 feet on 10/13/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/13/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-66

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Brown to yellowish brown sand, little gravel and silt, subround to round, medium dense, moist.		3	
2	43	NA			NM	5	Sample collected from 2-2.5 feet for radiological analysis, and 3 feet for VOC analysis.
3						21	
4				Grades to dark brown with red brick, fine to coarse, loose, dry (Fill).		5	
5				Grades to brownish yellow to yellowish brown, fine to coarse, some gravel, subround to round, loose, dry.		4	
6	38	NA			NM	6	
7						5	Sample collected from 7.5-8 feet for radiological analysis.
8							
9				Borehole was completed at 8 feet on 10/13/02. Groundwater was not encountered during drilling.			
10							
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25							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/13/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-67

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	43	NA	SW / ML	***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand, little gravel, angular to round, loose, dry. Grades to brownish yellow to brown. Grades to light grey, fine to medium.	NM	0	Sample collected from 2-2.5 feet for radiological analysis.
4–8	42	NA	ML / SW	***Silt (ML)*** Dark brown to yellowish brown silt, little gravel and trace clay, subround to round, medium dense, moist. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	Sample collected from 7.5-8 feet for radiological analysis.
8–20				Borehole was completed at 8 feet on 10/13/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/13/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-68

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	38	NA		***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand, little gravel, subround to round, fine to coarse, loose, dry. Grades to dark brown with some gravel and little silt, subround to round, fine to coarse, medium dense, moist. Grades to yellowish brown at approximately 3' bgs, wet. Grades to trace silt at 4' bgs, moist.	NM	105 NR	NR = not recorded Sample collected from 0.5-1 feet for VOC analysis. Sample collected from 2-3 feet for radiological analysis and from 4 feet for VOC analysis.
4–8	44	NA			NM	NR	Sample collected from 6.5-8 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/13/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/13/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-69

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–2.8	35	NA	SW / ML	***Sand (SW)*** Asphalt surface overlying dark brown to yellowish brown fine to coarse sand, some gravel and trace silt, subangular to subround, medium dense, moist.	NM	60	NR = not recorded. Sample collected at 0.5 feet for VOC analysis.
2.8–4				***Silt (ML)*** Dark brown to brown grading to brownish yellow to yellowish brown silt, little gravel and trace fine sand and clay, subround to round, dense, dry.		NR	
4–8	35	NA	ML / SW	***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	NR	
8				Borehole was completed at 8 feet on 10/13/02. Groundwater was not encountered during drilling.			

Depth scale: 1–25 feet.

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-70

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	37	NA		***Sand (SW)*** Asphalt surface overlying, dark greyish brown fine to coarse sand, little gravel, subangular to round, loose, dry. Grades to yellowish brown to brown with some gravel, subround to round, fine to coarse, loose, moist.	4.6	3.7	Sample collected from 0.5-1 feet for VOC analysis. Sample collected from 2.5-3 feet for radiological analysis.
4–8	42	NA			NM	0	Sample collected from 7.5-8 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/14/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-71

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–2	45	NA		***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand, little gravel, angular to round, loose, dry.	13.3 NM	11 2.1 0.2	Sample collected from 0.5-1 feet for VOC analysis, and from 1.5-2 feet for radiological analysis.
2–4				***Silt (ML)*** Dark brown to brown grading to yellowish brown silt, with gravel and trace fine sand and organics, subround to round, dense, dry.			
4–8	43	NA		***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, fine to coarse, loose, dry.	NM	NR	Sample collected from 7.5-8 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/14/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-72

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	28	NA	SW / ML	***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand, little gravel and trace silt, angular to round, loose, dry. Grades to brown to yellowish brown with little silt, medium dense, moist.	NM	0	Sample collected from 2.5-3.5 feet for radiological analysis.
4-8	26	NA	ML / SW	***Silt (ML)*** Dark brown to brown silt, trace gravel and fine sand, subround to round, medium dense, moist. ***Sand (SW)*** Brownish yellow to yellowish brown sand, some gravel, subround to round, loose, dry.	NM	0	Sample collected from 7.5-8 feet for VOC analysis.

Borehole was completed at 8 feet on 10/14/02.
Groundwater was not encountered during drilling.

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-73

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	34	NA		***Sand (SW)*** Concrete surface overlying dark brown to yellowish brown fine to coarse sand, some gravel and trace silt, subround to round, loose, dry. ***Silt (ML)*** Dark brown to black silt, trace gravel and fine sand, subround to round, dense, organics, dry.	0	NR	Sample collected from 2-2.5 feet for radiological analysis, and from 2.5-2.8 feet for VOC analysis.
4–8	43	NA		Grades to brownish yellow to light yellowish brown, medium dense, moist. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	2.4	Sample collected from 7.5-8 feet for radiological analysis.

Borehole was completed at 8 feet on 10/14/02.
Groundwater was not encountered during drilling.

Depth scale: 1–25 feet.

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02, 10/22/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-74/74B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	42	NA		***Sand (SW)*** Asphalt surface overlying dark greyish brown fine to coarse sand, some gravel and trace silt, subround to subangular, loose, dry. Grades to dark brown with little gravel.	NM	207 82.3 65.5 101 678	
4-8	37	NA		***Silt (ML)*** Dark brown to light yellowish brown silt with fine sand and clay, medium dense, organics, moist. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, little gravel, subround to round.	NM	1736 566 562 296 116	Sample collected from 4 feet from U-74 for VOC analysis.
8-12	12	NA			NM	115 298 313	Sample colelcted from 11.5-12 feet from U-74 for radiological analysis.
12-16	16	NA			NM	625 652 885 592 521	
16-20	NR	NA			NA	360 605 531 633 268	Sample colelcted from 19.5 feet from U-74B for radiological analysis, and at 20 feet for VOC analysis.
20-25				Borehole U-74 was completed at 16 feet on 10/14/02. Borehole U-74B was sampled from 12 to 20 feet on 10/22/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-75A

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	NR	NA		***Sand Fill (SW)*** Asphalt surface overlying dark greyish brown to brown fine to coarse sand, little gravel and silt, subround to round, medium dense, dry (Fill).	NM	NR 3.7	NR = not recorded
4–8	NR	NA		3" of concrete at approximately 4' bgs.	NM	10.7 1.6 3.9 4.6 2.6 2.1	Sample collected from 4-4.3 feet for VOC analysis. Sample collected from 7-7.5 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/14/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-75B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	38	NA		***Sand Fill (SW)*** Asphalt surface overlying dark greyish brown to brown fine to coarse sand, little gravel and silt, subround to round, medium dense, fill, moist.	NM	3.1 (3)	Sample collected from 2.5-3' for radiological analysis.
4-8	15	NA		Dark grey silt and gravel observed approximately 7.8' bgs.	NM	5.2 (4), 3.7 (5), 7.5 (6), 4.3	Sample collected from 6-6.3 feet for VOC analysis, and 6.5-7 feet for radiological analysis.
8-25				Borehole was completed at 8 feet on 10/14/02. Groundwater was not encountered during drilling.			

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-75C

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	31	NA		***Sand (SW)*** Dark brown to yellowish brown fine to coarse sand, some gravel, subround to round, medium dense, dry.	NM	3.1	No samples collected for analysis.
4–8	22	NA			NM	2.7 4.3 4.7 6.7 5.9	
8–25				Borehole was completed at 8 feet on 10/14/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-75D

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	39	NA		***Sand (SW)*** Dark brown to brown fine to coarse sand, some gravel and little silt, subround to round, medium dense, dry, (Fill).	NM	6.8 9.7	No samples collected for analysis.
4–8	16	NA		Concrete.	NM NM	5.6 6.6	
8–12	15	NA		Wood. ***Sand and Gravel (SW-GW)*** Dark brown to black fine to coarse sand and gravel, little silt, subround to round gravel, medium dense, dry.	NM	NR	
12–25				Borehole was completed at 12 feet on 10/14/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/14/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-75E

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	36	NA		***Sand (SW)*** Asphalt surface overlying dark grey fine to coarse sand, little gravel and silt, angular to subangular, loose, dry. Grades to dark brown, subround to round.	NM	0	
4-8	18	NA		(Open borehole 4-6' bgs. No recovery.) Grades to light grey with little gravel, subround to round, fine to coarse, loose, dry. Grades to dark brown with little gravel and silt, moist.	NM	0	
8-12	11	NA			NM	0	Sample collected from 11-11.5' for metals and Nickel analysis, and from 11.5-12 feet for radiological analysis.
12-25				Borehole was completed at 12 feet on 10/14/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/16/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-76

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	37	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, some gravel and little silt, subround to round, loose, wet. Grades to brown to brownish yellow with some gravel and coarse sand, subround to round, fine to medium, dry.	NM	0	Sample collected from 1-2 feet for radiological analysis.
4–8	36	NA		Grades to trace silt.	NM	0	Sample collected from 6.5-7 feet for VOC analysis, and 7-8 feet for radiological analysis..
8–25				Borehole was completed at 8 feet on 10/16/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/16/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-77

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	37	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, some gravel and trace silt, angular to round, loose, dry. Grades to brownish yellow. ***Silt (ML)*** Dark brown to black silt, dense, organics, dry.	NM	0	Sample collected from 2.5-3 feet for radiological analysis.
4–8	38	NA		Grades to brownish yellow with little sand, fine to medium, medium dense. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry. Brown silt observed approximately 7.7' bgs.	NM	0	Sample collected from 7.5-8 feet for radiological analysis.

Borehole was completed at 8 feet on 10/16/02.
Groundwater was not encountered during drilling.

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/17/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-78

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	26	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, some gravel and little silt, angular to round, loose, dry. Grades to brown to brownish yellow with little gravel, subround to round.	NM	0	Samples collected 2.5-3.5 feet for radiological analysis.
4–8	36	NA		***Silt (ML)*** Dark brown to brownish yellow silt, trace gravel and organics, subround to round, loose, dry. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	Samples collected 7.5-8 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/17/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/17/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-79C

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	22	NA	ML	***Silt (ML)*** Yellowish brown to dark brown silt, trace fine sand and organics, loose, dry.	NM	0	Sample collected from 3-3.5 feet for radiological analyies.
4-8	37	NA	ML / SW	Grades to pale yellow, medium dense, moist. ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	Sample collected from 7.5-8 feet for radiological analyies.
8-25				Borehole was completed at 8 feet on 10/17/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-80

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	31	NA		***Silt (ML)*** 6" concrete surface overlying brownish yellow silt, trace gravel, subround to round, dense, dry.	NM	0	No samples collected for analysis.
				Sand Fill (SW) Brownish yellow to dark brown to black fine to coarse sand, some gravel and slag, subround to round, medium dense, dry (Fill).			
				Silt (ML) Dark brown silt observed approximately 3.8' bgs (Fill).			

Depth scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25

Borehole was completed at 4 feet on 10/18/02.
Groundwater was not encountered during drilling.

Logged by:

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-81

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	24	NA		***Sand (SW)*** Brown sand, some gravel and silt, subround to round, medium dense, moist. Grades to dark brown to black with little gravel and silt, dry.	NM	2.3 1.1 0.7 5.4	
4–8	27	NA		Grades to brownish yellow to yellowish brown with some gravel and trace silt, loose.	NM	2.8 3.1 5.5 2.3	Sample collected from 7-7.3 feet for VOC analysis, and 7.5-8 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/18/02. Groundwater was not encountered during drilling.			

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-82

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	37	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, some gravel and little silt, angular to subangular, loose, dry. Grades to brown to very dark brown with trace concrete, subround to round, fill.	NM	0	Sample collected from 1.5-2 feet for radiological analysis.
				Silt (ML) Dark brown silt, trace sand, medium to coarse, medium dense, dry.			
4-8	35	NA		***Sand (SW)*** Brown to brownish yellow fine to coarse sand, some gravel and little silt, subround to round, medium dense, moist.	NM	0	
8-12	37	NA		***Silt (ML)*** Pale yellow silt, little gravel and fine sand, trace clay, subround to round, medium dense, moist. Grades to no gravel.	NM	0	Sample collected from 11-11.3 feet for metals analysis, and from 11.5-12 feet for radiological analysis.
				Sand (SW) Brownish yellow to yellowish brown sand, some gravel, subround to round, fine to coarse, loose, dry.			

Borehole was completed at 12 feet on 10/18/02.
Groundwater was not encountered during drilling.

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-83

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	38	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, little gravel and trace silt, angular to subangular, loose, dry (Fill). Grades to brown to dark brown with some gravel and little silt, subround to round, fine to coarse, medium dense, moist.	NM	0	Sample collected from 2.5-3 feet for radiological analysis.
4–8	37	NA		Concrete. ***Silt (ML)*** Dark brown silt, little gravel and fine to medium sand, subround to round, dense, dry. ***Sand (SW)***	NM	0	
8–12	32	NA		Dark brown to pale yellow fine to coarse sand, little gravel and silt, subround to round, dense, moist. Grades to brownish yellow to yellowish brown.	NM	0	Sample collected from 11.5-12 feet for radiological analysis.
12–25				Borehole was completed at 12 feet on 10/18/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007

Project: Soil Borings Fall 2002

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 10/19/02

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-84

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	30	NA		***Sand (SW)*** Dark grey to dark brown fine to coarse sand, some angular to subround gravel and little silt, loose, dry. Grades to strong brown.	NM	0	Sample collected from 2.5-3 feet for radiological analysis.
4-8	48	NA		***Silt (ML)*** Dark brown with some gravel and little sand, subround to round, fine to coarse, loose, moist. ***Sand (SW)*** Brownish yellow with some gravel and little silt, subangular to subround, fine to coarse, loose, dry. Grades to little gravel, subround to round.	NM	0	Sample collected from 7.5 feet forVOC analysis, and 7.5-8 feet for radiological analysis.

Borehole was completed at 8 feet on 10/19/02.
Groundwater was not encountered during drilling.

Depth scale: 1–25 feet

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-85

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	34	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, some gravel and little silt, angular to subangular, loose, dry. Grades to dark brown to yellowish brown with trace gravel. ***Silt (ML)*** (from ~3.7 ft)	NM	0	Sample collected from 2.5-3 feet for radiological analysis.
4–8	33	NA		***Silt (ML)*** Dark brown silt, loose, organics, dry. Grades to brown to pale yellow. ***Sand (SW)*** Brownish yellow to yellowish brown sand, some gravel and little silt, subround to round, loose, dry.	NM	0	Sample collected from 7.5-8 feet for radiological analysis.

Borehole was completed at 8 feet on 10/18/02.
Groundwater was not encountered during drilling.

Depth scale: 1–25 feet.

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-86A

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	24	NA		***Sand and Gravel (SW-GW)*** Dark grey fine to coarse sand and gravel, little silt, angular to subangular, loose, moist. ***Sand (SW)*** Dark brown sand, some gravel subangular to round.	NM	0	No samples collected for analysis.
4–8	6	NA			NM	0	
8–12	14	NA		Grades to brown to reddish yellow, dry.	NM	0	
12–25				Borehole was completed at 12 feet on 10/19/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-86B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	30	NA		***Sand and Gravel (SW-GW)*** Dark grey to black fine to coarse sand and gravel, little silt, loose, moist, (fill)	NM	NR	Sample collected from 2.5-3 feet for radiological analysis.
				Sand (SW) Dark brown fine to coarse sand, little gravel and some silt, subangular to round, loose, moist (Fill).			
4-8	36	NA		2" concrete	NM	NR	
				Silt (ML) Grey silt, little gravel and fine to coarse sand, subround to round, medium dense, moist.			
8-12	37	NA		***Sand (SW)*** Reddish yellow to brown fine to coarse sand with some gravel, subround to round, loose, dry.	NM	NR	
12-16	32	NA		Grades to black to dark grey. Grades to reddish yellow to brown.	NM	0.9	Sample collected from 15.5-16 feet for VOC analysis.
16-20	27	NA			NM	0.3	Sample collected from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/19/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-87

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	28	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, some gravel and little silt, angular to subangular, loose, dry. Grades to brown to yellowish brown. ***Silt (ML)*** Dark brown to pale yellow silt, loose, organics, dry.	NM	0	Sample collected from 2.5-3 feet for radiological analysis.
4–8	35	NA		***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel and little silt, subround to round, loose, dry.	NM	0	Sample collected from 5.5-8 feet for VOC analysis, and 5.8-6 feet for metals analysis, and 6.5-8 feet for radiological analysis.
8–25				Borehole was completed at 8 feet on 10/18/02. Groundwater was not encountered during drilling.			

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-88

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	29	NA	SW	***Sand (SW)*** 6" concrete surface overlying brownish yellow to brown fine to medium sand, little gravel, subround to round, medium dense, moist.	NM	1.7 (1), 5.1 (2), 4.7 (3), 5.4 (4)	Sample collected from 4-4.5 feet for VOC analysis.
4–8	20	NA	SW / ML	Grades to some gravel, fine to coarse. ***Silt (ML)*** Light greenish grey silt, medium dense, moist.	NM	11.1, 5.1 (5), 1.3 (6), 1.9 (7), 1.7 (8)	

Borehole was completed at 8 feet on 10/18/02.
Groundwater was not encountered during drilling.

Depth scale: 1–25 feet.

Logged by: P. Rabideau

Project No: 27010-039-007

Project: Soil Borings Fall 2002

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 10/19/02

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-89

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	34	NA		***Sand (SW)*** Dark brown fine to coarse sand, some gravel and silt, subangular to subround, medium dense, moist.	NM	0	Sample collected from 2-3 feet for radiological analysis.
				Silt (ML) Brownish yellow silt, little gravel and fine to coarse sand, subround to round, moist.			
4–8	6	NA		***Sand (SW)*** Dark yellowish brown fine to coarse sand, little gravel.	NM	0	
				Sand and Gravel Fill (SW-GW) Brown fine to coarse sand and gravel, brick and concrete fragments at 8', moist (Fill).			
8–25				Borehole was completed at 8 feet on 10/19/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-89B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	18	NA	SW	***Sand (SW)*** Dark brown fine to coarse sand, some gravel and silt, subangular to round, moist.	NM	0	Sample collected from 2.5-3 feet for radiological analysis.
4-8	36	NA	ML / SW / ML	***Silt (ML)*** Dark brown silt, little sand, fine to coarse, medium dense, moist. ***Sand (SW)*** Dark brown fine to coarse sand, some gravel and little silt, subround to round, moist. Grades to yellowish red with little gravel, loose, dry. ***Silt (ML)*** Grey silt, little sand, fine to coarse, medium dense, moist. ***Sand (SW)*** Brownish yellow fine to coarse sand, little gravel, subround to round, loose, dry.	NM	0	Sample collected from 7.5-8 feet for radiological analysis.

Borehole was completed at 8 feet on 10/19/02.
Groundwater was not encountered during drilling.

Depth scale: 1–25 feet.

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-90

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	18	NA		***Silt and Sand (SM)*** Black silt and sand, loose, organics, moist. ***Sand (SW)*** Dark greyish brown fine to coarse sand, little gravel and silt, subangular to angular, loose, dry. ***Silt (ML)*** Brown to dark brown silt, with little fine sand, and organics, medium dense, dry. Grades to pale yellow with little gravel, subround to round.	NM	2.7 1.9 2.3 33.2 1.7 0.7	Sample collected from 1-2 feet for radiological analysis, and from 2-2.3 feet for VOC analysis.

Borehole was completed at 4 feet on 10/18/02.
Groundwater was not encountered during drilling.

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/18/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-91

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	27	NA		***Sand (SW)*** Dark greyish brown fine to coarse sand, some gravel and trace silt and organics, angular to subangular, medium dense, dry. ***Silt (ML)*** Dark brown silt, little gravel and some fine sand, trace organics, subround to round, wood, concrete, medium dense, dry (Fill). ***Sand (SW)*** Brownish yellow to yellowish brown fine to coarse sand, some gravel, subround to round, medium dense, dry.	NM	0	Sample collected at 2-2.3 feet for VOC analysis, and from 2.5-3 feet for radiological analysis.

Borehole was completed at 4 feet on 10/18/02.
Groundwater was not encountered during drilling.

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Logged by: P. Rabideau

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-92

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	32	NA		***Sand and Gravel (SW-GW)*** Dark grey to black fine to coarse sand and gravel, some silt, loose, moist. ***Sand (SW)*** Brown to dark brown fine to coarse sand, little gravel, subround to round, loose, dry.	NM	0	Sample collected from 2-2.5 feet for radiological analysis.
4-8	24	NA		Schist fragments at approximately 1.5' bgs. Grades to brown with some silt.	NM	0	
8-12	29	NA		***Sand and Gravel (SW-GW)*** Reddish yellow to brown with fine to coarse gravel and sand, subangular to round, loose, dry. ***Sand (SW)*** Brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	
12-16	34	NA			NM	0	Sample collected from 16.5-17 feet for metals analysis.
16-20	30	NA			NM	0	Sample collected from 19-19.5 feet for VOC analysis, and from 19.5-20 feet to radiological analysis.
20-25				Borehole was completed at 20 feet on 10/19/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-93

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	37	NA		***Sand (SW)*** Dark brown fine to coarse sand, some gravel and little silt, subangular to round, loose, moist. ***Silt (ML)*** Dark brown to black silt, little gravel and some sand, subround to round, fine to coarse, medium dense to loose, dry.	NM	NR	Sample collected from 1-2.5 feet for radiological analysis.
4–8	36	NA		***Sand (SW)*** Light brown to brown fine to coarse sand, some gravel and little silt, subround to round, loose, dry. Grades to brown to dark brown with little gravel and some silt.	NM	NR	
8–12	37	NA		***Silt (ML)*** Grey silt, little gravel and sand, subround to round, fine to coarse, wet. ***Sand (SW)*** Reddish yellow to brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	NR	
12–16	36	NA		***Sand and Gravel (SW-GW)*** Reddish yellow fine to coarse sand and gravel, subangular to round, loose, dry. ***Sand (SW)*** Reddish yellow fine to coarse sand, some gravel, subround to round, loose, dry.	NM	NR 0.4	
16–20	32	NA			NM	0.5 0.3 0.1	Sample collected from 17-17.5 feet for metals analysis. Sample collected from 19-19.5 feet for radiological analysis,a nd 19.5-20 feet for VOC analysis.
20–25				Borehole was completed at 20 feet on 10/19/02. Groundwater was encountered at approximately 8 feet during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/22/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-94

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	26	NA	SW	***Sand (SW)*** Dark grey sand with some gravel and little silt, subangular to angular, moist. Grades to dark brown with little gravel and silt, subround to round.	NM	1.6 (1), 3.4 (2), 2.1 (3), 2.3 (4)	Sample collected from 2.5-4 feet for radiological analysis.
4–8	28	NA	SW	Grades to dark grey and dark brown with little gravel and some silt.	NM	6.4 (6), 4.2 (7), 5.4 (8)	
8–12	34	NA	SW / ML / SW	***Silt (ML)*** Dark brown silt with little gravel and fine to coarse sand, subround to round, medium dense, moist. 3-inches of bentonite at approximately 10.5' bgs. ***Sand (SW)*** Reddish yellow fine to coarse sand, little gravel, subround to round, loose, dry.	NM	26.8 (10), 20.4 (11), 1.5 (11.5)	Sample collected from 9 feet for metals analysis. Sample collected from 10 feet for VOC analysis. Sample collected from 11.5-12 feet for radiological analysis.

Borehole was completed at 12 feet on 10/22/02.
Groundwater was not encountered during drilling.

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/20/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-95

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	37	NA	SW / ML	***Sand (SW)*** Dark grey to grey fine to coarse sand, little gravel and silt, angular to subangular, loose, dry. Grades to dark brown with little gravel and some silt, subround to round.	NM	NR	Sample collected from 2.5-3 feet for radiological analysis.
4-8	33	NA	SW	***Silt (ML)*** Dark brown silt, little gravel and sand, subround to round, fine to coarse, black slag-like material, dry. ***Sand (SW)*** Brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	NR	
8-12	34	NA	SW / ML	Grades to grey with little gravel and some silt. Grades to reddish yellow. ***Silt (ML)*** Grey silt, little fine gravel and some sand, fine to coarse, medium dense, moist.	NM	NR	
12-16	38	NA	SW	Grades to brown with little sand, fine to medium. ***Sand (SW)*** Reddish yellow fine to coarse sand, little gravel, subround to round, loose, dry.	NM	5.6 9.7 2.7 6.9	
16-20	34	NA	SW		NM	8.8 7.6 6.3 1.9	Sample collected from 17-17.5 feet for metals and Nickel analysis, from 19-19.5 feet for radiological analysis, and from 19.5-20 feet for VOC analysis.
20-25				Borehole was completed at 20 feet on 10/20/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/20/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-96/96B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	31	NA	SW / ML	***Sand (SW)*** Dark grey to grey fine to coarse sand, some gravel, subangular to subround, loose, 3-inches of concrete at approximately 0.25' bgs, dry. Grades to dark brown with some gravel and little concrete fragments and silt, subround to round, fine to coarse, loose, dry.	NM	NR	Sample was collected from 1.5-2.5 feet for Radiological analysis.
4-8	34	NA	SW	***Silt (ML)*** Dark brown silt, little fine gravel and fine to coarse sand, subround to round, dry.	NM	NR	
8-12	38	NA	SW / ML	***Sand (SW)*** Reddish yellow to brown fine to coarse sand, some gravel, subround to round, loose, dry. Schist fragments at approximately 8.5' bgs. Grades to very pale brown with some gravel and little silt, angular to subround, fine to coarse, loose, dry.	NM	NR	
12-16	40	NA	ML / SW	***Silt (ML)*** Brown silt, little gravel and sand, subround to round, fine to coarse, moist. ***Sand (SW)*** Reddish yellow to brown with little gravel, subround to round, fine to coarse, loose, dry.	NM	7.3 4.9	Sample was collected from 14-15 feet for VOC analysis.
16-20	35	NA	SW		NM NM	5.9 7.9 4.3 3.2	Sample was collected from 19-19.5 feet for Radiological analysis and 19.5-20 feet for VOC analysis.
20-25				Borehole U-96 was completed at 8 feet on 10/19/02. Borehole U-96B was sampled form 0 to 20 feet on 10/20/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/22/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-97

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Grey fine to coarse sand, some gravel, subangular to angular, loose, dry.			
2	39	NA		Grades to brown with little gravel and silt, subround to round.	NM	NR	Sample collected from 2.5-3.5 for radiological analysis.
3							
4				***Silt (ML)*** Dark brown grading to dark yellowish brown silt, little gravel, sand, and organics, subround to round, fine to coarse, medium dense, moist.			
5						1.1	
6	40	NA			NM		
7				***Sand (SW)*** Brown grading to dark brown and brownish yellow fine to coarse sand, little gravel, subround to round, dry.		1.3	Sample collected from 8 for VOC analysis, and 8.5 feet for metals analysis.
8						2.7	
9				***Sand and Gravel (SW-GW)*** Brown fine to coarse sand and gravel, loose, dry.		1.1	
10	40	NA		***Sand (SW)*** Reddish yellow grading to brown fine to coarse sand, little gravel, subround to round, fine to coarse, loose, dry.	NM		
11						1.4	
12						1.7	
13							
14	39	NA			NM	NR	
15							
16						2.1	
17						2.4 1.7	
18	34	NA			NM	2.3	
19							Sample collected from 19.5-20 for radiological analysis.
20							
21				Borehole was completed at 20 feet on 10/22/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/21/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-98

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	28	NA		***Sand Fill (SW)*** Dark brown fine to coarse sand, little gravel, subangular to subround, loose, brick fragments, dry (Fill).	NM	NR	Sample collected from 2-2.5 feet formMetals analysis, and 2.5-3 feet for radiological analysis.
4-8	44	NA		Grading to reddish yellow and brown. ***Silt (ML)*** Brown silt, little gravel and sand, subround to round, fine to coarse, medium dense, moist.	NM	NR	
8-12	39	NA		***Sand (SW)*** Reddish yellow fine to coarse sand, some gravel, subangular to subround, loose, dry.	NM	NR	Sample collected from 12 feet for VOC analysis.
12-16	36	NA			NM	NR 3.2	
16-20	29	NA			NM	NR 1.8	Sample collected from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/21/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/22/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-99

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	28	NA		***Sand and Gravel (SW-GW)*** Dark grey to grey fine to coarse sand and gravel, little silt, angular to subangular, loose, dry. ***Sand (SW)*** Brown fine to coarse sand, little gravel and silt, subround to round, loose, dry.	NM	0	
4–8	32	NA		***Silt (ML)*** Dark brown to reddish yellow silt, little sand, medium dense, organics, dry. ***Sand (SW)*** Reddish yellow fine to coarse sand, some gravel, subround to round, loose, dry.	NM	0	
8–12	10	NA		***Silt (ML)*** Brown silt, little sand, fine to coarse, medium dense, moist. ***Sand (SW)*** Brown fine to coarse sand, some gravel, subround to round, loose, moist.	NM	0	Sample collected from 11-11.5 feet for radiological analysis, and 12-12.5 feet for VOC analysis.
12–16	31	NA		Grades to reddish yellow with some gravel, subround to round, fine to coarse, loose, dry.	NM	0	
16–20	27	NA			NM	0	Sample collected from 19.5-20 feet for radiological analysis.
20–25				Borehole was completed at 20 feet on 10/22/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-100

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	18	NA		***Sand (SW)*** Dark brown fine sand, little gravel, subangular to subround, loose, dry, (fill), overlying 4"of asphalt. ***Sand (SW)*** Dark brown fine to coarse sand, little gravel and some silt, subround to round, loose, moist.	NM	0	Sample collected from 3.5-4 feet for radiological analysis.
4–25				Refusal at 4 feet on 10/19/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-100B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	22	NA		***Sand (SW)*** Dark grey fine to coarse sand, little gravel and silt, angular to subangular, loose, dry, (fill), overlying 2"of asphalt. Grades to dark brown with some silt.	NM	0	Sample collected from 3.5-4 feet for radiological analysis.
4–				***Sand (SW)*** Dark brown fine to coarse sand, little gravel and some silt, subround to round, loose, moist.			
				Refusal at 4 feet on 10/19/02. Groundwater was not encountered during drilling.			

Depth scale: 1–25 feet

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/20/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-100C

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	22	NA		***Sand (SW)*** Dark grey to very dark brown fine to coarse sand, little gravel and silt, subangular to subround, moist, (Fill). overlying 3" of asphalt. ***Silt (ML)*** Dark brown silt, some gravel and little sand, subround to round, fine to coarse, loose, dry, (Fill).	NM	NR	Sample collected from 3-3.5 feet for radiological analysis.
4-8	18	NA		Overlying 4" of concrete. ***Sand (SW)*** Dark brown fine to coarse sand, some gravel and little silt, subround to round, loose, piece of metal at approximately 7.5' bgs, dry, (Fill).	NM	NR	
8-12	20	NA		Grades to brown to grey with little gravel and some silt.	NM	NR	
12-16	29	NA		Grades to brown to reddish yellow.	NM	7.2 12.4 0.9 1.8	Sample collected from 13.5-14 feet for VOCanalysis.
16-20	27	NA			NM	0 6.8 5.4 5.1 0	Sample collected from 19-19.5 feet for radiological analysis, and 19.5-20 feet for VOC analysis.
20-25				Boring was completed at 20 feet on 10/20/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-101

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	28	NA	ML	***Silt (ML)*** 3" concrete surface overlying brown silt, little gravel and fine to coarse sand, subround to round, medium dense, dry. Grades to very dark brown to black.	NM	1.1 (4)	
4-8	24	NA	ML / SW	***Sand (SW)*** Reddish yellow to brown fine to coarse sand, some gravel and little silt, subround to round, loose, dry.	NM	4.3 (5), 7.8 (6), 7.2 (7), 1.4 (8)	Sample collected from 5.5-6 feet for VOC analysis.
8-12	41	NA	SW / ML / SW	***Silt (ML)*** Grey silt, medium dense, dry. ***Sand (SW)*** Reddish yellow to brown fine to coarse sand with some gravel, subround to round, loose, dry.	NM	1.7 (9), 0.8 (10), 1.6 (11), 0 (12)	Sample collected from 11-11.5 feet for radiological analysis, and 11.5-12 feet for VOC analysis.

Boring was completed at 12 feet on 10/19/02.
Groundwater was not encountered during drilling.

Depth scale: 1–25 feet.

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-102

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	30	NA		***Sand and Gravel (SW-GW)*** Dark grey to grey fine to coarse sand and gravel, little silt, loose, dry. ***Sand (SW)*** Brown to dark brown fine to coarse sand, some gravel, subround to round, loose, dry. ***Silt (ML)*** Dark brown silt, little gravel and sand, subround to round, fine to coarse, medium dense, loose, dry.	NM	0	Sample collected from 1.5-3 feet for radiological analysis.
4–8	42	NA		***Sand (SW)*** Reddish yellow fine to coarse sand, some gravel, subangular to round, loose, dry.	NM	0	Sample collected from 7-7.5 feet for metal analysis, and from 7.5-8 feet for radiological analysis.
8–20				Boring was completed at 8 feet on 10/19/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/19/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-103

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	34	NA		***Sand and Gravel (SW-GW)*** Dark grey to grey fine to coarse sand and gravel, some silt, subangular to angular, loose, moist.	NM	0	Sample collected from 2-2.5 feet for radiological analysis.
				Sand (SW) Brown to dark brown fine to coarse sand, some gravel, subround to round, loose, dry.			
4-8	28	NA		***Silt (ML)*** Dark brown silt, little gravel and some sand, subround to round, fine to coarse, dry.	NM	0	Sample collected from 7.5-8 feet for radiological and VOC analysis.
				Sand (SW) Brown to dark brown fine to coarse sand, some gravel, subround to round, loose, dry.			
				Silt (ML) Brown silt, little gravel and sand, fine to coarse, subround to round, moist.			
				Sand (SW) Reddish yellow to brown fine to coarse sand, little gravel, subround to round, loose, dry.			
				Silt (ML) Dark grey to grey silt, little gravel and sand, subround to round, fine to coarse, dry.			

Boring was completed at 8 feet on 10/19/02.
Groundwater was not encountered during drilling.

Depth scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25

Logged by: C. McMahon

Project No: 27010-039-007

Project: Soil Borings Fall 2002

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 10/19/02

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-104

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	38	NA		***Sand and Gravel (SW-GW)*** Grey to dark grey fine to coarse sand and gravel, subangular to angular, loose, dry. ***Sand (SW)*** Dark brown sand, some gravel, subangular to round, loose, dry. ***Silt (ML)*** Dark brown to black silt, little sand, fine to coarse, medium dense, dry.	NM	0	Sample collected from 1-1.5 feet for radiological analysis.
4–8	34	NA		***Sand (SW)*** Dark brown to reddish yellow to brown fine to coarse sand, some gravel and little silt, subround to round, loose, dry.	NM	0	
8–25				Boring was completed at 8 feet on 10/19/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/21/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-105

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	39	NA		***Sand (SW)*** Grey sand, little gravel and silt, fine to coarse, loose, dry. ***Silt (ML)*** Dark brown grading to brown silt, little sand, fine to coarse, medium dense, dry.	NM	0	Sample collocted from 1-1.5 feet and 1.5-2 feet for radiological analsyis.
4–8	46	NA		***Sand (SW)*** Reddish yellow grading to red fine to coarse sand, little gravel, subround to round, loose, dry. Grading to brown.	NM	0	Sample collocted from 5 feet for VOC analysis, and 5.5 feet for metals analsyis.
8–12	37	NA		Grading to little silt, moist. Grading to some gravel, dry. Grading to reddish yellow with little gravel.	NM	0	
12–25				Boring was completed at 12 feet on 10/21/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/22/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-106

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Dark brown sand, little gravel and silt, subround to round, loose, dry.			Sample collected from 1.5-2.5 feet for radiological analysis.
2	40	NA			NM	NR	
3				***Silt (ML)*** Dark brown grading to brown silt, little gravel and sand, subround to round, fine to coarse, moist.			
4						1.1	
5				***Sand (SW)*** Reddish yellow fine to coarse sand, little gravel, subround to round, fine to coarse, loose, dry.		1.1	
6	46	NA			NM	NR	Sample collected from7-7.5 feet for metals analysis and 7.5-8 feet for VOC analysis.
7				Grades to brownish yellow to very pale brown.			
8						1.3	
9				Grades to brown with some gravel, subangular to subround.			
10	40	NA			NM	1.1	
11				Grades to reddish yellow with little gravel, subround to round.		1.4	
12							
13						NR	
14	38	NA			NM	1.2	
15						1.6	
16				Grades to brown.		1.9	
17						1.7	
18	33	NA			NM	2.6	
19						1.6	Sample collected from19.5-20 feet for radiological analysis.
20							
21				Boring was completed at 20 feet on 10/22/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/20/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-108

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Dark brown fine to coarse sand, little gravel and silt, subround to round, loose, dry.			Sample collected from 1.5-2.5 feet for radiological analysis.
2	40	NA			NM	1.2	
3				Grades to black and brown with some coal-like material.		5.7	
4				***Silt (ML)*** Black silt, little sand, fine to coarse, medium stiff, moist.		11	
5						6.8	
6	38	NA		Grades to dark brown to brown with little gravel and sand, subround to round, medium dense.	NM	4.2	
7				***Sand (SW)*** Reddish yellow fine to coarse sand, little gravel, subround to round, loose, dry.		2.6	
8						3.7	
9				***Silt (ML)*** Grey silt, little gravel and sand, subround to round, fine to coarse, medium dense, moist.		2.6	
10	34	NA			NM	1.1	
11				***Sand (SW)*** Brown fine to coarse sand, some gravel, subround to round, loose, dry.		3.2	
12						3.6	
13				***Silt (ML)*** Brown silt, little gravel and sand, subround to round, fine to coarse, medium dense, moist.		15.4	
14	37	NA			NM	13.7	Sample collected from 15 feet for VOC analysis.
15						27.9	
16				***Sand (SW)*** Reddish yellow fine to coarse sand, little gravel, subround to round, loose, dry.		5.7	
17						12.8	Sample collected from 18 feet for VOC analysis, 18-18.5 feet for metals and Nickel analyses, and 19.5-20 feet for radiological analysis.
18	37	NA			NM	12.6	
19						6.3	
20						4.6	
21				Boring was completed at 20 feet on 10/20/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/22/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-109

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	31	NA		***Sand (SW)*** Grey grading to dark brown fine to coarse sand, some grading to little gravel and little silt, subangular to angular, loose, dry. ***Silt (ML)*** Dark brown grading to yellow silt, little sand and organics, fine to coarse, medium dense, dry.	NM	NR	Sample collected from 2-2.5 feet for radiological analysis.
4-8	44	NA		***Sand (SW)*** Yellow sand, little gravel, subround to round, loose, dry.	NM	NR	Sample collected from 6-7 feet for VOC analysis, and 6.5-7 feet for metals analysis.
8-12	30	NA		***Silt (ML)*** Brown silt, little gravel and sand, subround to round, fine to coarse, medium dense, moist. ***Sand (SW)*** Reddish yellow grading to brown fine to coarse sand, little gravel, subround to round, loose, dry.	NM	NR	
12-16	42	NA			NM	1.2 1.5 2.3	
16-20	38	NA			NM	1.8 1.3 2.5 1.7 1.3	Sample collected from 19.5-20 feet for radiological analysis.
20-25				Boring was completed at 20 feet on 10/22/02. Groundwater was not encountered during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/22/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-110

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	43	NA		***Sand (SW)*** Dark grey fine to coarse sand, little gravel, subangular to angular, loose, dry. Grading to dark brown with strong solvent-like odors at approximately 1.5' bgs.	NM	39.1, 153, 659, 2500	Sample collected from 1-1.5 feet for radiological analysis, and 2.5-3 feet for VOC analsyis.
				Silt (ML) Dark brown silt, medium dense, dry.			
4–8	32	NA		***Sand (SW)*** Dark brown grading to reddish yellow fine to coarse sand, little gravel, subround to round, loose, dry.	NM	126, 66.8, 15.1, 25.4	
8–12	35	NA		***Silt (ML)*** Brown silt, little sand, fine to coarse, medium dense, moist.	NM	6.2, 10.8, 9.3, 11.8, 9.0	Sample collected from 10-12.5 feet for radiological analysis, and 11 feet for metals analsyis, and 12 feet for VOC analysis.
				Sand (SW) Reddish yellow fine to coarse sand, little gravel, subround to round, loose, dry.			

Borehole was completed at 12 feet on 10/22/02.
Groundwater was not encountered during drilling.

Depth scale: 1–25 feet.

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/22/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-111

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Dark grey fine to coarse sand with some gravel and little silt, subangular to angular, loose, moist.			Sample collected from 1.5-2 feet for radiological analysi.
2	34	NA		Grades to dark brown to reddish yellow with little gravel and some silt, subround to round.	NM	1.1	
3				Black slag-like material at approximately 2.5' bgs.		1.1	
4						2.3	
5				***Silt (ML)*** Dark brown to brown silt with little fine to coarse sand, moist.		5.1	
6	24	NA			NM	9.7	
7				***Sand (SW)*** Brownish yellow fine to coarse sand, little gravel, subround to round, loose, dry.		4.0	
8						3	
9						2.5	Sample collected from 11.5 feet for metals analysis, 11.5-12 feet for radiological analsyis, and 12 feet for VOC analysis.
10	35	NA			NM	4.1	
11						10.5	
12						5.1	
13				Borehole was completed at 12 feet on 10/22/02. Groundwater was not encountered during drilling.			
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/21/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-112

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	34	NA		***Sand (SW)*** Grey fine to coarse sand, some gravel and little silt, subangular to angular, dry. ***Silt (ML)*** Dark brown silt, little sand, fine to medium, medium dense, dry.	NM	NR	Sample collected from 1.5-2 feet and 2-2.5 feet for radiological analysis.
4-8	38	NA		Grades to brown to grey with little gravel, subround to round, moist. ***Sand (SW)*** Yellowish red grading to reddish yellow and brown fine to coarse sand, little gravel, subround to round, loose, dry.	NM	1.4	Sample collected from 5 feet for VOC analysis, and 5.5 feet for metals analysis.
8-12	41	NA		***Silt (ML)*** Brown silt, little gravel and some sand, subround to round, fine to coarse, medium dense, wet. ***Sand (SW)*** Light brown fine to coarse sand, some gravel, subround to round, loose, dry.	NM	NR	
12-16	40	NA		Grades to brown to reddish yellow with little gravel.	NM NM	1.1	
16-20	35	NA			NM	NR	Sample collected from 19.5-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/21/02. Groundwater was encountered at approximately 8 feet during drilling.			

Logged by: C. McMahon

Project No: 27010-039-007

Project: Soil Borings Fall 2002

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 10/21/02

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-113

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Dark grey fine to coarse sand, little gravel and silt, subangular to angular, loose, dry.			
2	18	NA			NM	NR	
3				***Silt (ML)*** Dark brown silt, little sand, fine to coarse, medium dense, dry.			
4							
5				***Sand (SW)*** Brownish yellow grading to yellowish red fine to coarse sand, little gravel, subround to round, loose, dry.		1.1	
6	42	NA			NM	1.3	
7				Grading some to little gravel.			Sample collected from 7.5 feet for metals analysis, and 7.5-8 feet for VOC analysis.
8				***Silt (ML)*** Brown silt, little sand, fine to coarse, medium dense, moist.			
9							
10	37	NA		***Sand (SW)*** Yellowish red fine to coarse sand, little gravel, subround to round, loose, dry.	NM	NR	
11							
12				Grading reddish yellow to brownish yellow with some to little gravel.		1.5	
13							
14	38	NA			NM		
15						1.6	
16						0.9	
17						1.6	
18	33	NA			NM	1.3	
19						1.0	Sample collected from 19.5-20 feet for radiological analysis.
20							
21				Borehole was completed at 20 feet on 10/21/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/21/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-113B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	42	NA		***Sand (SW)*** Grey fine to coarse sand, some gravel and little silt, subangular to angular, loose, dry.	NM	0	Sample collected from 1-2 feet for radiological analysis.
				Silt (ML) Dark brown silt, little sand and organics, fine to coarse, medium dense, moist. Grades to dark yellowish brown with little gravel and sand, wet.			
				Sand (SW) Yellowish red fine to coarse sand, with little gravel, subround to round, loose, dry.			
				Borehole was completed at 4 feet on 10/21/02. Groundwater was encountered at approximately 1.5 feet during drilling.			

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-114

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	38	NA		***Sand (SW)*** Asphalt surface overlying dark grey/brown fine to coarse sand, some angular gravel and little silt, subround to round sand, loose, solvent-like odors, dry, (Fill). 2-inches of silt with little clay observed approximately 2' bgs. Solvent-like odors.	NR	23.8, 133, 278, 150	Sample collected from 1.5-4 feet for radiological analysis.
4-8	23	NA		Grades to yellow brown with little gravel, solvent-like odors to the total depth of the boring (Native).	NR	301, 373, 401, 577	Sample collected from 6-7 feet for radiological analysis.
8-12	39	NA			NR	204, 461, 339, 473	
12-16	39	NA			NR	245, 678, 220, 497	Sample collected from 15-15.5 feet for VOC analysis.
16-20	39	NA			NR	293, 139, 284	Sample collected from 18.5-19 feet for VOC analysis, and 19-20 feet for radiological analysis.
20-25				Borehole was completed at 20 feet on 10/29/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/23/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-115

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
				Sand (SW)		1.9	
1				Dark grey fine to coarse sand, some gravel and little silt, subangular to angular, dry.		5.1	Sample collected from 2-3 feet for radiological analysis.
2	24	NA		Grades to dark brown with little gravel and some silt, medium dense.	NM	7.3	
3						7.6	
4				Grades to little silt, brick fragments.		4.6	
5				Grades to brownish yellow.		2.0	
6	39	NA				2.6	
7						2.9	
8						2.4	
9						3.8	
10	38	NA			NM	6.9	
11						4.1	
12						4.9	
13						5.0	
14	33	NA			NM	8.4	
15						7.9	
16						3.4	Sample collected from 17 feet for metals analysis.
17						5.1	Sample collected from 18.5-19.5 feet for radiological analysis, and 19.5 feet for VOC analysis.
18	36	NA			NM	7.8	
19						14.6	
20						8.4	
21				Borehole was completed at 20 feet on 10/23/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-116

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1	39	NA		***Sand (SW)*** Asphalt surface overlying dark grey/brown fine to coarse sand, some angular gravel and silt, subround to round, loose, dry.	NM	4.6	Sample collected from 1-2.5 feet for radiological analysis.
2						5.5	
3				***Silt (ML)*** Dark brown grading to yellow-brown silt, little gravel and fine sand, subround to round, medium dense, dry.		9.1	
4	43	NA			NM	9.5	
5				***Sand (SW)*** Yellow-brown fine to coarse sand, some gravel, subround to round, loose, dry.		12.7	
6						12.6	
7						10.7	
8	42	NA			NM	8.2	
9						4.6	
10						5.0	
11						7.1	
12	38	NA			NM	3.9	
13						5.0	
14						6.0	
15						3.0	
16	35	NA			NM	3.9	
17						2.5	
18						7.7	
19						12	Sample collected from 18.5-19 feet for VOC analysis, and 19-20 feet for radiological analysis.
20	27	NA			NM	4.1	
21						0.8	
22						1.2	
23						2.3	
24						0.3	
25						7.6	

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-116

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	34	NA			NM	15.7	
27						18.3	
28						6.9	
29						10.8	
30	37	NA			NM	19.7	
31						27.6	
32						10.4	
33						6.7	
34	37	NA			NM	40.3	
35						18.2	
36						16.1	
37						22.6	
38	36.5	NA			NM	30.2	Sample collected from 39-39.5 feet for VOC analysis and 39.5-40 radiological analysis.
39						45.2	
40						18.2	
41				Borehole was completed at 40 feet on 10/30/02. Groundwater was not encountered during drilling.			
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/23/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-117

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1	34	NA		***Sand (SW)*** Dark brown grading to brown fine to coarse sand, little gravel and some silt, subround to round, dry. 4-inches of concrete at approximately 2.5' bgs.	NM	3.5, 3.9	Sample collected from 1-2.5 feet for radiological analysis.
2						9.5	
3						5.5	
4	39	NA			NM	35.1	
5						22.4	
6						30.4	
7						12.1	
8	35	NA			NM	4.4	
9						<1	
10						12.7	
11						12.4	
12	36	NA			NM	14.2	
13						17.6	
14						65	
15						135	
16	32	NA			NM	49	
17						23	
18						28	
19				Grades to yellowish red.		161	
20	35	NA		Moist to the total depth of the boring.	NM	22	
21						10.7	
22						56	
23						44	
24						20	
25						22	

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/23/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-117

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	31	NA			NM	52	
27						70	
28						668	Sample collected from28 feet for VOC analysis.
29						170	
30	32	NA			NM	42	
31						325	
32						82	
33						14	
34	32	NA			NM	81	
35						68	
36						82	
37						80	
38	35	NA			NM	366	Sample collected from 39 feet for VOC analysis, and from 39.5-40 feet for radiological analysis.
39						810	
40						344	
41				Borehole was completed at 40 feet on 10/23/02. Groundwater was not encountered during drilling.			
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-118

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	38	NA		***Sand (SW)*** Asphalt surface overlying dark grey/brown fine to coarse sand, with some gravel and little silt, subangular to round, loose, dry (Fill). Slag at approximately 3.5' bgs.	NM	0, 0.5, 8, 17.3	
4-8	24	NA		20-inches of concrete observed at approximately 6' and 7' bgs.	NM	15.3, 0.5, 2.6	Sample collected from 7-8 feet for radiological analysis.
8-12	36	NA		***Silt (ML)*** Yellow-brown silt, little gravel and fine to medium sand, medium dense, dry (Native). ***Sand (SW)*** Dark grey/brown with some gravel, subangular to round, loose, dry. Grading to yellow-brown, subround to round.		2, 11.5, 1.8, 0.9	
12-16	42	NA			NM	1, 0.4, 1.2, 1.2	
16-20	39	NA			NM	3.7, 2.1	Sample collected from 19.5-20 feet for radiological analysis, and 21-21.5 feet for VOC analysis.
20-24	37	NA			NM	0.4, 4.9, 4.0, 7.2	
24-25						3.2	

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-118

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26 27 28	38	NA			NM	2.3 5.5 5	
29 30 31 32	28	NA			NM	3.7 27.1 11.5 7.2	
33 34 35 36	41	NA			NM	5.6 6.4 14.2 13.4	
37 38 39 40	40.5	NA			NM	9.6 8.4 14.1 16 7.1	Sample collected from 38-39 feet for radiological analysis and from 39.5-40 feet for VOC analysis.
41 42 43 44 45 46 47 48 49 50				Borehole was completed at 40 feet on 10/29/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-119

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
				Sand (SW)			
1				Dark grey/brown fine to coarse sand, some angular to round gravel, little slag, loose, dry (Fill).		1.3	
2	30	NA				0.3	Sample collected from 1.5-2.5' for radiological analysis.
3						8.6	
4				10-inches of concrete recovered 4-8' bgs.		7.2	
5							
6	10	NA			NM	2.2	
7							
8				12-inches of crushed concrete recovered 8-12' bgs.			
9							
10	12	NA			NM	14.3	
11							
12				***Sand (SW)***		10.1	
13				Yellow brown sand, some gravel, subround to round, loose, dry (Native).		14.1	
14	37	NA			NM	11.2	
15						6.5	
16						9.5	Sample collected from 17.5-18.5' for radiological analysis.
17						12.7	
18	39	NA			NM	11.4	
19						13.0	Sample collected 18.5-19' for VOC analysis.
20							
21				Borehole was completed at 20 feet on 10/30/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-120

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	30	NA		***Asphalt*** ***Sand (SW)*** Dark grey/brown with some yellow-brown sand, some gravel and little silt, loose, dry.	NM	4.5, 4.1, 4.9	Sample collected from 2-3' for radiological analysis.
4-8	35	NA			NM	3.9, 12.5, 5.5, 8.2	
8-12	33	NA		***Silt (ML)*** Brown silt, little gravel and fine to medium sand, subround to round, medium dense, dry. ***Sand (SW)*** Yellow brown fine to coarse sand, some fine to coarse gravel, subround to round, loose, dry.	NM	5.3, 21.0, 3.6, 4.0	Sample collected 8.5-9' for VOC analysis.
12-16	43	NA			NM	1.1, 2.2, 3.0, 1.7	
16-20	38.5	NA			NM	1.4, 4.4, 3.8, 2.8	Sample collected 18.5-19' for VOC analysis.
20-24	35	NA			NM	3.6, 32.6, 6.1, 4.0	Sample collected from 19.5-20' for radiological analysis.
24-25						2.6, 3.9	

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-120

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	43	NA			NM	4.7	
27						11.2	
28						11.5	
29						11.1	
30	43	NA			NM	17.6	
31						13.5	
32						7.1	
33							
34	43	NA			NM	32.6	
35						15.3	
36						6.7	
37						43.7	
38	41	NA			NM	38.6	Sample collected 39-40 feet for radiological analysis, and 39-39.5 feet for VOC analysis.
39						52.3 21.0	
40							
41				Borehole was completed at 40 feet on 10/29/02. Groundwater was not encountered during drilling.			
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/22/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-121

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	36	NA	NM	2.3, 4.1, 8.3, 3.6	Sample collected from 1.5-2 feet for radiological analysis.
4–8	42	NA	NM	1.2, 3.1, 5.0, 3.8	
8–12	43	NA	NM	4.4, 8.2, 3.8, 5.3	
12–16	38	NA	NM	2.2, 10.9, 20.2, 18.8	
16–20	35	NA	NM	11.8, 11.8, 11.3, 20.6, 8.1	Samples collected from 19 feet for metal analysis, 19.5 feet for radiological analysis, and 20 feet for VOC analysis.

Description

Sand (SW)
Grey grading to dark brown sand, some grading to little gravel and little silt, angular to round, loose, dry.
2-inches of wood at approximately 1' bgs.

Silt (ML)
Dark brown silt, little gravel and some fine to coarse sand, subround to round, moist.

Sand (SW)
Reddish yellow fine to coarse sand, little gravel, subround to round, loose, dry.

Silt (ML)
Dark brown silt, little gravel and some fine to coarse sand, medium dense, moist.

Sand (SW)
Reddish yellow fine to coarse sand, little gravel, subround to round, loose, dry.

Silt (ML)
Dark brown grading to brown silt, little gravel and some grading to little fine to coarse sand, medium dense, moist.

Sand (SW)
Brown fine to coarse sand, little gravel, subround to round, loose, dry.

Silt (ML)
Brown silt, little gravel and fine to coarse sand, medium dense, moist.

Sand (SW)
Yellow fine to coarse sand, little gravel, subround to round, loose, dry.

Borehole was completed at 20 feet on 10/22/02.
Groundwater was not encountered during drilling.

Logged by: C. McMahon

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/28/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-122

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1	43	NA		***Asphalt***	NM	0	Sample collected from 0.5-1.5 feet for radiological analysis.
2				***Sand (SW)*** Dark grey/brown fine to coarse sand, some angular gravel and silt, subround to round, loose, dry.		0	
3						0	
4	42.5	NA		***Silt (ML)*** Yellow-brown to brown silt, little gravel and fine sand, subround to round, medium dense, dry.	NM	0	
5						0	
6				***Sand (SW)*** Yellow-brown fine to coarse sand, some gravel, subround to round, loose, dry.		0	
7						0.3	
8	42	NA			NM	0	
9						0	
10						0	
11						0.4	
12	38.5	NA			NM	0	
13						0	
14						0.6	
15						0	
16	30	NA			NM	0	
17						0	Sample collected 18.5-19 feet for VOC analysis and 19-20 feet for radiological analysis.
18						0.4	
19						0	
20						0	
21				Borehole was completed at 20 feet on 10/28/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/29/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-123

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Dark grey/brown fine to coarse sand, some angular to subangular gravel and little silt, subround to round, loose, dry.			
2	27	NA			NM	2.1	
3				***Silt (ML)*** Brown grading to yellow brown silt, little grading to some gravel and some fine sand, medium dense, trace roots, dry.		2.4	
4						1.2	
5						1.9	
6	34	NA		***Sand (SW)*** Yellow-brown sand, some gravel, subround to round, loose, dry.	NM	0.8	
7						0.7	
8						0.8	
9							Sample collected from 10.5-11 feet for VOC analysis.
10	24	NA			NM	0.3	
11						0.5	Sample collected 11-12 feet for radiological analysis.
12						1.0	
13				Borehole was completed at 12 feet on 10/29/02. Groundwater was not encountered during drilling.			
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-124

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-1				***Asphalt***			
1	35	NA		***Sand (SW)*** Dark grey/brown with some angular gravel and silt, subround to round, fine to coarse, loose, dry.	NM	3.6	
2						13.0	
3				***Silt (ML)*** Very dark brown grading to yellow brown with little gravel and fine sand, subround to round, medium dense, dry.		10.6	Sample collected from 3-4 feet for radiological analysis.
4	40	NA			NM	3.5	
5						4.9	
6				***Sand (SW)*** Yellow-brown with some gravel, subround to round, fine to coarse, loose, dry.		6.2	
7						3.0	
8	4	NA			NM		
9							
10							
11							
12	34	NA			NM	1.0	
13						6.1	
14						13.1	Sample collected from 14-14.5 feet for VOC analysis.
15						1.9	
16	31	NA			NM	3.2	
17						4.7	
18						4.1	
19						9.7	Sample collected from 19-20 feet for radiological analysis.
20	26	NA			NM	11.4	
21							
22						10.5	
23						4.0	
24						2.3	
25						17.8	

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-124

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	37	NA			NM	22.4	
27						17.2	
28						8.0	
29						37.7	
30	36	NA			NM	22.0	
31						21.6	
32						6.3	
33						138	Sample collected from 33-34 feet for VOC analysis.
34	31	NA			NM	34.7	
35						34.0	
36						15.8	
37						14.8	
38	32	NA			NM	4.4	Samples collected from 38.5-40 feet for VOC analysis and 39-40 feet for radiological analysis.
39						7.9	
40						4.4	
41				Borehole was completed at 40 feet on 10/30/02. Groundwater was not encountered during drilling.			
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-125

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
				Asphalt			
1				***Sand Fill (SW)***		21.9	
2	36	NA		Dark grey/brown fine to coarse sand with some angular to subround gravel and silt, concrete observed 2"-3", loose, dry (FILL).	NM	17.6	
3						32.9	Sample collected from 3-3.5 feet for radiological analysis.
4						33.2	
5						63.8	Sample collected 5-6 feet for VOC analysis.
6	28	NA		***Sand (SW)***	NM	19.8	
7				Grades to yellow brown sand with some gravel, subround to round, loose, dry.		4.7	
8						3.0	
9							
10	16	NA			NM		
11						1.9	
12						2.5	
13							
14	23	NA			NM	7.6	
15						0.2	
16						0.3	
17						1.8	Sample collected 18.5-19 feet for VOC analysis and 19-20 feet for radiological analysis.
18	31	NA			NM	2.3	
19						3.3 0.9	
20							
21				Borehole was completed at 20 feet on 10/30/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-126

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	29	NA	SW / ML	***Sand (SW)*** Dark grey/brown with some gravel and slag, angular gravel, subround to round sand, loose, dry. ***Silt (ML)***	NM	0.4 (1), 0.4 (2), 0.8 (3), 0.7 (4)	
4–8	8	NA	SW	***Sand (SW)*** Yellow-brown.	NM	0.4 (7), 1.1 (8)	
8–12	31	NA	SW		NM	0.2 (9), 0.3 (10), 0.3 (11), 0.4	Sample collected from 10.5-11 feet for VOC analysis and 11.5-12 feet for radiological analysis.
12–25				Borehole was completed at 12 feet on 10/30/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-127

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	34	NA		***Asphalt*** ***Sand (SW)*** Dark grey/brown fine to coarse sand with some angular to subround gravel, subround to round, loose, dry. ***Silt (ML)*** Brown grading to yellow silt, roots.	NM	1: 2.5 2: 4.8 3: 2.4 4: 0.3	Sample collected from 2-3 feet for radiological analysis.
4-8	41	NA		***Sand (SW)*** Yellowish brown sand, subround to round, loose, dry.	NM	5: 1.6 6: 1.2 7: 0.7 8: 0.9	
8-12	41	NA			NM	9: 0.5 10: 0.8 11: 2.2 12: 2.2	
12-16	39	NA			NM	13: 0.8 14: 0.9 15: 2.2 16: 1.4	
16-20	36	NA			NM	17: 1.5 18: 1.1 19: 2.0 20: 2.2	Sample collected 18.5-19 feet for radiological analysis and 19.5-20 feet for VOC analysis.
20-25				Borehole completed at 20 feet on 10/30/02. Groundwater was not encountered during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-128

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Asphalt surface overlying dark brown fine to coarse sand, some angular gravel and little silt, subround to round, little slag, loose, dry (Fill).		1.7	
2	36	NA			NM	5.1	
3						8.1	
4						14.9	
5							
6	29	NA			NM	15.6	Sample collected from 6-6.5 feet for VOC analysis, and from 6.5-7.5 feet for radiological analysis.
7						7.2	
8						5.5	
9				***Sand (SW)*** Yellow-brown fine to coarse sand, some gravel, subround to round, loose, dry.			
10	26.5	NA			NM	18.8	
11						3	
12						2.4	
13						2.3	
14	30	NA			NM	6.3	
15						8.4	
16						1.9	
17							
18	19.5	NA			NM	1.9	
19						2.7	Sample collected from 19-19.5 feet for VOC analysis, and from 19.5-20 feet for radiological analysis.
20						4.7	
21						14.2	
22	30	NA			NM	12.9	
23						11.6	
24						9.4	
25						18.4	

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/30/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-128

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	30	NA			NM	11	
27						15.3	
28						12.2	
29						17.8	
30	30	NA			NM	23.5	
31						32	
32						15.1	
33						17.1	
34	32	NA			NM	24.4	
35						28	
36						14.1	
37						14.9	
38	27.5	NA			NM	23	Sample collected from 39.5-40 feet for VOC analysis, and radiological analysis.
39						41.7 48.1	
40							
41				Borehole was completed at 40 feet on 10/30/02. Groundwater was not encountered during drilling.			
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/31/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-129

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Asphalt surface overlying dark grey/brown fine to coarse sand, some angular to subround gravel, subround to round, loose, dry (Fill).		0.5	
2	33	NA			NM	1	Sample collected from 2-2.5 feet for radiological analysis.
3						1.6	
4						1.7	
5						0.8	
6	31	NA			NM	1.8	Sample collected from 6.5-7 feet for radiological analysis.
7				***Silt (ML)***		1.4	
8				Dark brown grading to yellow brown silt with little gravel, subround to round, medium dense, dry.		1.1	
9				3-inches of sand with some gravel at approximately 7.3' bgs.			
10	18	NA			NM		
11				***Sand (SW)*** Yellow-brown fine to coarse sand with some gravel, subround to round, loose, dry.		1.5	
12						0.7	
13						1	
14	31	NA			NM	1.1	
15						0.8	
16						1.2	
17						0.9	
18	30	NA			NM	1.7	Sample collected from18.5-19.5 feet for radiological analysis, and 19.5-20 feet for VOC analysis.
19						1.2	
20						1.4	
21							
22	4	NA			NM		
23							
24							
25						4.7	

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/31/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-129

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	31.5	NA			NM	1	
27						1.4	
28						1	
29						1.6	
30	34	NA			NM	1.3	
31						3.1	
32						2.4	
33						2.1	
34	35	NA			NM	1.5	
35						1.6	
36						5	
37						5	Sample collected from 38.5-39.5 feet for radiological analysis, and from 39.5-40 feet for VOC analysis.
38	35	NA			NM	6	
39						1.1	
40							
41				Borehole was completed at 40 feet on 10/31/02. Groundwater was not encountered during drilling.			
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/31/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-130

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	36	NA		***Sand (SW)*** Asphalt surface overlying dark grey/brown sand with some gravel.	NM	4.8 (1), 1.8 (2), 0.8 (3), 0.8 (4)	Sample collected from 1.5-2.5 feet for radiological analysis.
				Silt (ML) Dark brown grading to yellow brown with little gravel, subround to round, medium dense, dry grading to moist.			
4-8	42	NA		***Sand (SW)*** Yellow-brown with gravel, subround to round, loose, dry.	NM	1.1 (5), 0.4 (6), 0.6 (7), 0.6 (8)	
				Silt (ML) Yellow-brown with some fine sand, dense, moist.			
8-12	40	NA		***Sand (SW)*** Yellow-brown with gravel, subround to round, loose, dry.	NM	0.5 (9), 1.1 (10), 0.8 (11), 1.5 (12)	
12-16	42.5	NA			NM	0.5 (13), 2.1 (14), 1.1 (15), 1.3 (16)	
16-20	4	NA			NM	2.3 (17)	
20-24	31	NA			NM	5.5 (21), 6.1 (22), 3.6 (23), 6.1 (24)	Sample collected from 21.5-22.5 feet for radiological analysis, and form 21-21.5 feet for VOC analysis.
24-25						18.3 (25)	

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/31/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-130

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	35	NA			NM	10.3	
27						4.9	
28	36	NA			NM	3.2	
29						14.3	
30						17.4	
31						17.2	
32	36	NA			NM	5.5	
33						18.7	
34						10	
35						35	
36	37	NA			NM	11	
37						6.7	
38						21.1	Sample collected from 38.5-39.5 feet for radiological analysis, and 39.5-40 feet for VOC analysis.
39						12.7	
						14.5	
40				Borehole was completed at 40 feet on 10/31/02. Groundwater was not encountered during drilling.			
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/31/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-131

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
				Sand (SW)		2.3	Sample collected from 0.5-2 feet for radiological analysis.
1				Asphalt surface overlying dark grey/brown fine to coarse sand, some angular to subround gravel and silt, subround to round, loose, dry.		1.5	
2	42	NA			NM	5.4	
3				***Silt (ML)***		5.3	
4				Dark brown silt with little gravel, medium dense, dry.		3.6	
5				***Sand (SW)*** Orange brown and brown fine to coarse sand, some gravel and silt, loose, dry.			
6	33	NA		2-inches of yellow-brown silt at approximately 3.8' bgs.	NM	1.8	
7				Grading to yellow-brown with some gravel, subround to round.		1.3	
8						1.6	
9							
10	31	NA				0.9	
11						1.2	
12						0.9	
13							
14	28	NA			NM	2.9	
15						1.4	
16						0.9	
17							
18	27	NA			NM	0.7	Sample collected from 18.5-19.5 feet for radiological analysis, and form 19.5-20 feet for VOC analysis.
19						0.6	
20						2.2	
21							
22	20.5	NA			NM	5.4	
23						1.5	
24						2.6	
25						1	

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/31/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-131

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	36	NA			NM	6.2	
27						5.7	
28						5.8	
29						16.3	
30	33	NA			NM	6.3	
31						6	
32						1.6	
33						2	
34	25.5	NA			NM	7	
35						5.8	
36						4.2	
37						66.2	Sample collected from 38.5-39.5 feet for radiological analysis, and from 39.5-40 feet for VOC analysis.
38	30.5	NA			NM	11.3	
39						6.5	
						9.8	
40							
41				Borehole was completed at 40 feet on 10/31/02. Groundwater was not encountered during drilling.			
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: M. McHugh

Project No: 27010-039-007

Project: Soil Borings Fall 2002

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 10/31/02-11/1/02

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-132

URS

1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Concrete*** 6-inches thick.		14.5	
2	30	NA		***Sand (SW)***	NM	10.1	
3				Yellow-brown, brown, and grey fine to coarse sand with some gravel and little silt, subround to round, loose, dry.		50.5	
4						20.4	
5						7.7	
6	42	NA			NM	12.7	
7						54.0	
8						32.8	
9							
10	25.5	NA			NM	42.4	Sample collected from 11-12 feet for VOC analysis.
11						249	
12						220	Samples collected from 12-13 feet, 13-13.5 feet, and 14.5-16 feet for radiological analyses.
13				White crushed gravel (talc-like) 12-12.5' bgs.		175	
14	45.5	NA			NM	320	
15						51	
16						13.6	
17						15.3	
18	41.5	NA			NM	36.3	
19						26.6	
20						18.8	Sample collected from 19.5-20 feet for VOC analysis.
21						26.0	
22	40	NA			NM	6.1	Sample collected from 23-24 feet for radiological analysis.
23						3.8	
24				White crushed gravel (talc-like) 23-24' bgs.		2.6	
25				Borehole completed at 24 feet on 11/1/02.			
26				Groundwater was not encountered during drilling.			
27							
28							
29							
30							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/31/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-133

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1	35	NA	SW	***Sand (SW)*** Asphalt surface overlying dark grey/brown fine to coarse sand, some gravel and little silt, loose, dry.	NM	1.6	
2			ML	***Silt (ML)*** Dark brown grading to yellow-brown silt, little gravel and fine sand, medium dense, dry.		0.5	Sample collected from 2.5-3.5 feet for radiological analysis.
3						0.3	
4	44	NA	SW	***Sand (SW)*** Yellow-brown fine to coarse sand, some gravel, loose, dry.	NM	0.4	
5						0	
6						0	
7						0	
8	31.5	NA			NM	0.2	
9							
10						0	
11						0	
12	37.5	NA			NM	0.1	
13						0.3	
14						0.9	
15						0.2	
16	36	NA			NM	0	
17							
18						0	Sample collected from 18.5-19.5 feet for radiological analysis, and 19.5-20 feet for VOC analysis..
19						0.1	
20	33	NA			NM	0.7	
21						5	
22						1.1	
23						1.1	
24						1.2	
25						2.3	

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/31/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-133

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	37	NA			NM	1.3	
27						0.7	
28						0.7	
29						4.9	
30	35.5	NA			NM	2	
31						2	
32						1.6	
33						8.7	
34	35	NA			NM	3.3	
35						1.4	
36						1.3	
37						8.7	
38	36.5	NA			NM	1.7	Sample collected from 38.5-39.5 feet for radiological analysis, and 39.5-40 feet for VOC analysis.
39						1.9	
40						2.1	
41				Borehole was completed at 40 feet on 10/31/02. Groundwater was not encountered during drilling.			
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 11/1/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-134

URS

1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
				Sand (SW)			
1				Asphalt surface overlying brown and yellow-brown fine to coarse sand, some angular to round gravel and silt, loose, dry.		1	
2	37	NA			NM	0.8	Sample collected from 2-3 feet for radiological analysis.
3				***Silt (ML)*** Dark brown to yellow brown silt, little gravel and fine sand, subround to round, roots, medium dense, dry.		1.6	
4						0.8	
5				***Sand (SW)***		0	
6	41	NA		Yellow-brown fine to coarse sand, some gravel and silt, subround to round, loose, dry.	NM	0	
7						0	
8						1.5	
9						0.5	
10	37	NA			NM	0	
11						0	
12						0.7	
13						0.2	
14	38	NA			NM	0.5	
15						0.3	
16						0.7	
17						6.7	
18	31	NA			NM	0.3	Sample collected from 18.5-19.5 feet for radiological analysis, and from 19.5-20 feet for VOC analysis.
19						0.6	
20						0.9	
21							
22	25.5	NA			NM	2.3	
23						1.7	
24						2.3	
25							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 11/1/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-134

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
26	29	NA			NM	1.7	
27						0.3	
28						1.3	
29						4.6	
30	32	NA			NM	0.7	
31						0.9	
32						2	
33						8.5	
34	32	NA			NM	0.9	
35						1.5	
36						0.9	
37						7.6	
38	35	NA			NM	1.4	Sample collected from38.5-39.5 feet for radiological analysis, and from 39.5-40 feet for VOC analysis.
39						0.9	
40						1	
41				Borehole was completed at 40 feet on 11/1/02. Groundwater was not encountered during drilling.			
42							
43							
44							
45							
46							
47							
48							
49							
50							

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 10/31/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-135

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	26	NA		***Asphalt***	NM		
				Sand Fill (SW) Dark gray/brown to brown fine to coarse sand with some angular to round gravel, subround to round, loose, dry.		0.7 (2), 1.7 (3), 1.8 (4)	
4-8	21	NA			NM	1.6 (6), 2.4 (7), 1.9 (8)	Sample collected from 7-8' for radiological analysis.
8-12	23	NA		***Silt (ML)*** Yellow-brown silt with little gravel, medium dense, wet.	NM		
				Sand (SW) Yellow brown fne to coarse sand with some gravel, subround to round, loose, dry.		1.5 (10), 2.6 (11), 1.2 (12)	
12-16	29	NA			NM	1.4 (13), 1.3 (14), 1.7 (15), 2.6 (16)	
16-20	31	NA			NM	6.5 (17), 3.1 (18), 1.8 (19)	Sample collected from 18.5-19 feet for radiological analysis and 19.5-20 feet for VOC analysis.
20-25				Borehole was completed at 20 feet on 10/31/02. Groundwater was encountered at 8' bgs during drilling.			

Logged by: M. McHugh

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/09/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-136

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
				Gravel (GW) Light grey gravel, angular, fine, dry.		0	
1				***Sand (SW)*** Brown medium to coarse sand with trace subangular fine gravel, dry.		0	
2	39	NA			NM	0	
3				***Silt (ML)*** Dark brown grading to dark yellowish orange silt with trace fine gravel, dry.		0	
4				***Sand (SW)*** Moderately dark grey fine to coarse sand.		1.0	Sample collected from 4-4.5 feet for VOC and metal analyses.
5				***Sand and Silt (SM)*** Moderately yellowish brown medium sand and silt with little subround fine gravel, moist.		0	
6	36	NA			NM	0	
7				***Sand (SW)*** Dark yellowish orange medium sand with trace gravel, dry.		0	
						0	
8							
9				Borehole was completed at 8 feet on 12/9/02. Groundwater was not encountered during drilling.			
10							
11							
12							
13							
14							
15							

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-137

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	40	NA		***Gravel*** Medium light gray gravel, roadbase. ***Sand (SW)*** Greyish olive grading to light brown medium to coarse sand with little fine subangular grading to angular gravel, dry.	NM	0	
4–8	26	NA		***Gravel (GW)*** Grey gravel with little brick, angular, coarse. ***Sand (SW)*** Dark yellowish orange medium sand with trace fine grading to coarse gravel, dry.	NM	0	Sample collected from 5-6' for VOC analysis.
8–25				Borehole was completed at 8 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-138

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	41	NA		***Gravel (GW)*** Light grey fine gravel, angular, dry. ***Sand (SP)*** Greyish olive sand grading to dark brown to dark yellowish orange with some subround fine gravel, dry.	NM	0	
4-8	35	NA		***Sand (SM)*** Grades to little gravel, moist.	NM	0	Sample collected from 5.5-6 feet for VOC analysis.
8-25				Borehole was completed at 9 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-139

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	43	NA		***Gravel (GW)*** Light grey gravel, angular, fine to coarse.	NM	0	
				Sand (SP) Dark yellowish brown sand with little subround fine gravel, dry.			
				Silt (SM) Dark brown silt with trace round gravel and some medium sand, dry.			
				Sand (SP) Dark brown sand with little fine round gravel, dry.			
4–8	29	NA		***Sand (SW)*** Grades to brownish yellow sand with little subangular fine gravel.	NM	0	Sample collected from 6-6.5 feet for VOC analysis and 6.5-7 feet for metal analysis.
				Silt (ML) Yellowish grey silt with trace fine subangular gravel, moist.			
				Sand (SW) Dark yellowish orange medium to coarse sand with trace subround fine gravel, dry.			
8–10				Borehole was completed at 8 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-140

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–1				***Sand (SW)*** Dark brown coarse sand with trace subangular fine gravel, grading to brown medium sand and gravel, dry.			No samples collected for analysis.
1–3 (2)	38	NA		***Silt (ML)*** Dark brown silt grading to yellowish orange with trace subangular gravel, dry grading to moist.	NM	0	
3–4				***Sand (SW)*** Greyish orange with trace subround fine gravel, fine, dry.			
4–12				Borehole was completed at 4 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-140B

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	37	NA		***Sand (SW)*** Dusky yellowish brown medium to coarse sand with trace subround fine gravel, dry.	NM	0	
				Silt (ML) Dark brown silt grading to dark yellowish orange with trace subangular fine gravel, dry grading to moist.			Sample collected from 3-3.5 feet for VOC analysis.
4-8	48	NA		***Sand (SW)*** Greyish orange fine sand grading to dark yellowish orange with trace fine gravel, dry.	NM	0	Sample collected from 7-7.5 feet for metal analysis.
8-25				Borehole was completed at 8 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-141

URS

1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–0.5				***Asphalt and Roadbase***			
0.5–3	26	NA		***Sand (SW)*** Dark brown medium to coarse sand with little subangular fine gravel, dry.	NM	2.1 (1); 2.0 (2); 0 (2.5)	Sample collected 1.5-2 feet for VOC analysis.
3–4				***Gravel (GW)*** Light grey gravel with trace fine sand, angular, coarse, dry.		0 (3.5)	
4–7	33	NA		***Sand (SW)*** Dark yellowish orange medium to coarse sand, grading to very light grey with trace to some fine to angular gravel, dry.	NM	0 (4.5); 0 (5.5); 0 (6.5)	
7–8				***Silt (ML)*** Dark yellowish orange silt with trace fine sand, moist.		0 (7.5)	
8–15				Borehole was completed at 8 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-142

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–1	41	NA	GP	***Gravel (GP)*** Greyish black fine gravel with trace roots, dry.	NM	0.5	
1–2			SW	***Sand (SW)*** Moderately brown medium sand with trace fine gravel, dry.		0	Sample collected from 2.5-3 feet for VOC analysis.
2–3			ML	***Silt (ML)*** Moderate yellowish brown silt with little fine gravel, moist.		0	
3–4			SW	***Sand (SW)*** Dark yellowish orange sand with some subangular fine gravel, medium, dry.		0.5 0	
4–12				Borehole was completed at 4 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-143

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–1	39	NA		***Sand (SP)*** Moderately brown medium sand with trace fine gravel, dry.	NM	0, 0	
1–3				***Silt (ML)*** Dark brown silt grading to brownish yellow with little grading to some fine gravel, subround, dry grading to moist.		0, 0	
3–4				***Sand (SW)*** Dark yellowish orange medium sand with some fine subround gravel, dry.		0, 1.0	Sample collected from 3.5-4' for VOC analysis.
4–12				Borehole was completed at 4 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007

Project: Soil Borings Fall 2002

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 12/9/02

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-144

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–2				***Sand (SP)*** Dark yellowish brown medium sand with little subround fine gravel, dry.		0 0	
2–3	31	NA		***Silt (ML)*** Brown silt with little subround fine gravel and some coarse sand, moist.	NM	0	Sample collected from 2-2.5 feet for metal analysis.
3–4				***Sand (SW)*** Dark yellowish orange medium to coarse sand with some fine gravel, dry.		0 0.5	
4–12				Borehole was completed at 4 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-145

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SW)*** Dark brown fine to medium sand with little organics, moist.		12	Sample collected from 1-1.5 feet for VOC analysis.
2	38	NA		Grades to brownish yellow medium to coarse sand with little fine gravel, dry.	NM	1.2	
3						2.8	
4						0.2	
5						0.4	
6	39	NA		***Silt (ML)*** Dark yellowish orange silt with trace fine gravel and some medium sand, moist.	NM	0.4	
7						0.6	
8				***Sand (SP)*** Brownish yellow medium sand with some fine to coarse gravel, dry.		3.0	
9						2.4	
10	40	NA			NM	0.6	
11						1.0	
12						3.0	
13						1.4	
14	35	NA			NM	1.1	
15						0.5	
16						0.8	
17						0.2	
18	24	NA		Grades to trace subangular coarse gravel.	NM	0.2	Sample collected from 18.5-19 feet for VOC analysis.
19						0.0	
20							
21				Borehole was completed at 20 feet on 12/9/02. Groundwater was not encountered during drilling.			
22							
23							
24							
25							

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-146

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	39	NA		***Sand (SM)*** Dark brown fine sand with trace fine gravel and organics, round, dry. ***Silt (ML)*** Brown silt with trace fine to coarse gravel, round, moist.	NM	0 0 58 30	
4–8	41	NA		***Sand (SP)*** Brownish yellow medium to coarse sand with some fine gravel, dry. ***Sand and Gravel (GP)*** Brownish yellow medium to coarse sand with fine to coarse gravel, dry.		65 26 32 39 8.5 16 51 7.1	Samples collected 3.5-4' and 7.5-8' for VOC analyses.
8–25				Borehole completed at 8 feet on 12/9/02. Groundwater was not encountered during drilling.			

Logged by: E. Lovendusky

Project No: 27010-039-007
Project: Soil Borings Fall 2002
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 12/9/02
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-147

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				***Sand (SM)*** Dark brown fine sand with trace round fine gravel and trace organics, moist.		8.5	
2	39	NA			5	7.7	
3				***Sand (SW)*** Grades to brownish yellow medium to coarse sand with little round fine gravel, dry.	1.7	11.0	
4						38 7	
5				***Sand (SP)*** Grades to coarse.		22	
6	32	NA				9.7	
7					57		
8						15	Sample collected from 8-9 feet for VOC analysis.
9				***Sand (SW)*** Grades to brownish yellow fine to coarse sand with some round fine gravel, dry.	33	116	
10	36	NA			7	23	
11							
12						20 55	
13					15		
14	33	NA				67	Sample collected from 15.5-16 feet for VOC analysis.
15					47	32 13	
16				Borehole was completed at 16 feet on 12/9/02. Groundwater was not encountered during drilling.			
17							
18							
19							
20							
21							
22							
23							
24							
25							

Logged by: E. Lovendusky

APPENDIX C

RADIOLOGICAL

DATA USABILITY SUMMARY REPORT

Table of Contents

List of Tables

Executive Summary

This report addresses data quality for soil samples collected at the former Sylvania Electric Products Incorporated facility in Hicksville, New York (the Site). Sample collection activities were conducted by URS Corporation (URS) from October 8, 2002 through December 10, 2002.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for radiochemistry analyses including gamma spectrometry and alpha spectrometry for isotopic thorium and isotopic uranium using United States Department of Energy (USDOE) Methods and laboratory standard operating procedures (SOP). The analytical data generated for this investigation were evaluated by URS using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the Science Applications International Corporation (SAIC) *Laboratory Data Validation Guidelines For Evaluating Radionuclide Analyses*, 143-ARCS-00.08, Revision 06, June 2000 and USDOE *Guidance For Radiochemical Data Validation*, Draft RD4, October 4, 1995.

For gamma spectrometry analyses, uranium-235 interferes with the presence of radium-226. Both share the same energy line (i.e., 186 keV). The radium-226 results were determined from an alternate energy line (i.e., 295 keV). The 295 keV line is a secondary energy line for lead-214, which is a daughter product of radium-226, and under ideal conditions they are considered to be in secular equilibrium with each other. Using professional judgement, no data qualification was necessary.

The non-detect gamma spectrometry results for several samples were qualified as estimated (UJ) because the net negative results have uncertainties less than their absolute values. This may be an indication of improper blank subtraction, per the data validation guidelines, but the laboratory believes this is due to negative slopes in the regions of interest. In many cases the associated method blanks exhibited similar results. Since the algorithms used to calculate the sample results are different from the algorithms used to calculate the detection limits or minimum detected concentrations (MDC), this non-conformance does not adversely affect the usability of the data. Therefore, the affected data were not rejected, instead, the affected non-detect sample results were qualified as estimated (UJ) using professional judgement.

Other method non-conformance requiring data validation qualification (J and UJ) include: radionuclide identification and quantitation; blank contamination; tracer recovery exceedances; laboratory control sample (LCS) exceedances; and insufficient sample size. None of these non-conformances were significant enough to jeopardize the usability of the data.

Overall, 100 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J and UJ) due to data validation QA/QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for soil samples collected at the former Sylvania Electric Products Incorporated facility in Hicksville, New York (the Site). Sample collection activities were conducted by URS Corporation (URS) from October 8, 2002 through December 10, 2002. The quantity and types of samples that were submitted for data validation are presented in Table 1-1.

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report outlines deviations from the applicable QC criteria outlined in the following documents:

- GTE Operations Support Incorporated. (GTEOSI). 2002. *Soil Remediation Program Work Plan (QAPP: Appendix H), Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1,* Revision 2, October 2002.
- United States Department of Energy (USDOE). 1997. *Environmental Measurements Laboratory (EML) Procedures Manual, 28th Edition, Volume 1.* New York, New York.

Deviations from the QA/QC criteria were qualified based on guidance provided in the following documents:

- Science Applications International Corporation (SAIC). 2000. *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyzes*, 143-ARCS-00.08, Revision 06. Oak Ridge, Tennessee.
- USDOE. 1995. *Guidance for Radiochemical Data Validation*, Draft RD4. Gaithersburg, Maryland.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for radiochemistry analyses including gamma spectrometry and alpha spectrometry (thorium-228, thorium-230, thorium-232, uranium-234, uranium-235, and uranium-238) using USDOE Methods and laboratory standard operating procedures (SOP). The methods used in this investigation are presented in Table 1-2.

Table 1-2. *Analytical Method References*

Parameter	***Method***	***Reference***
Gamma Spectrometry	Ga-01-R Modified	1
Alpha Spectrometry (Thorium-228, -230, -232 and Uranium-234, -235, -238)	RP-725 and Laboratory SOPs STL-RD-0201, STL-RD-0203, and STL-RC-0240	2, 3, 4, 5

Table 1-2. *Analytical Method References*		
Parameter	***Method***	***Reference***

Notes:

1. United States Department of Energy (USDOE). 1997. *Environmental Measurements Laboratory (EML) Procedures Manual (HASL-300)*, 28th Edition, Volume 1. New York, New York.
2. USDOE. 1994. *Group Actinide Screening Using Extraction Chromatography (Eichrom)*, Draft RP725, Pacific Northwest Laboratory, Richland, Washington.
3. STL. 2002. *Daily Operations of an Alpha Spectroscopy System*. STL-RD-0201, Revision No. 3.
4. STL. 2001. *Calibration and Maintenance of a Alpha Spectroscopy System*. STL-RD-0203, Revision No. 1.
5. STL. 2002. *Isotopic Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EiChromM® Separation Resins*. STL-RC-0240, Revision No. 2.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. Specific QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Data completeness and usability are discussed in Section 4. Section 5 presents the Data Usability Summary Report (DUSR) Summary Information. A copy of the validated data is presented in Tables 5 and 6 of this Soils Report.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (GTEOSI, 2002), the analytical methodology, and the data validation guidelines referenced in Section 1 herein.

The following QA/QC parameters were evaluated for the radiochemistry (gamma spectrometry, alpha spectrometry) analyses (where applicable):

- Holding times and sample preservation;
- Calibration;
- Blank analysis;
- Tracer recovery (alpha spectrometry);
- Laboratory Control Sample (LCS);
- Duplicate analysis;
- Field duplicate analysis;
- Radionuclide quantitation and detection evaluation;
- Chemical separation specificity (alpha spectrometry);
- Target radionuclide list identification (gamma spectrometry);
- Tentatively identified radionuclides (gamma spectrometry);
- System performance; and
- Documentation completeness.

2.2. Data Validation Qualifiers

The following guidelines are used regarding the assignment of qualifiers and the use of qualified data:

- QA/QC exceedances which do not result in the qualification of an analyte, or which result in additional qualification of the analyte with the same qualifier, are not discussed.

- The use of estimated analytical data for quantitative uses is consistent with the guidance presented in the *USEPA Risk Assessment Guidance for Superfund* (USEPA 1992).

The following qualifiers have been used in this data validation.

"J" The associated numerical value is an estimated quantity, due to a QC or statistical exceedance.

"UJ" The associated non-detect value is an estimated quantity, due to a QC or statistical exceedance.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes which QA/QC parameters specified in Section 2.1 met validation criteria, and which QA/QC parameters did not meet validation criteria. Samples requiring qualification are described in the following sections, and are identified by the description documented on the sample chain-of-custody records.

3.2. Gamma Spectrometry Analyses

3.2.1. Criteria

The QA/QC parameters presented in Section 2.1 were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Holding times and sample preservation;
- Calibration;
- Duplicate analysis;
- Field duplicate analysis;
- System performance; and
- Documentation completeness.

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.2.2. Blanks

The blank results were evaluated using the following statistical approach: if the sample result ± uncertainty was less than ten times the associated blank result ± uncertainty, the qualifier "J" was applied to the associated sample result. The statistical evaluation of the blank results is summarized in Table 3-1. The QAPP requires method blanks to be less than the minimum detected concentrations (MDC) or 5 times the lowest sample activity. The method blanks were not always less than the lowest sample activity. The QAPP requires the laboratory to reanalyze the affected batch, but this was not done.

3.2.3. Radionuclide Quantitation and Detection Limits

The net negative results for several samples have uncertainties less than their absolute values. This may be an indication of improper blank subtraction, per SAIC data validation guidelines, but the laboratory indicates this is due to negative slopes in the regions of interest. The associated method blanks exhibited similar results. Since the algorithms used to calculate the sample results are different from the algorithms used to calculate the detection limits, this non-conformance does not compromise MDC. Therefore, the affected data was not rejected. Instead, using professional judgement the affected non-detect sample results were qualified as estimated ("UJ") at the MDC, as summarized in Table 3-2.

Table 3-1. *Blank Evaluation for Gamma Analyses.*

Blank ID	*Radionuclide*	*Blank Concentration ± Uncertainty (pCi/g)*	*Affected Samples*	*Action*
F2J230000-563B	Thorium-232	0.11 ± 0.13	U-27 (2-2.5), U-24 (11.5-12), U-65B (11.5-12), U-66 (2-2.5), U-66 (7.5-8), U-68 (6.5-8), U-68 (2-3), PMC-6, U-67 (2-2.5), U-24 (2.5-3), U-64 (2.5-3), U-27 (11.5-12), U-67 (7.5-8)	J
F2J230000-564B	Uranium-235	0.23 ± 0.31	U-8 (1-1.5), U-8 (1-1.5)-MD, U-62 (1-1.5), U-25 (2-2.5)	J
F2K010000-484B	Thorium-232	0.12 ± 0.12	U-56(0-1), U-56(10.5-11.5), U-57(0.5-1.5), U-57(19.5-20.0), U-78(2.5-3.5), U-78(7.5-8.0), U-79C(3-3.5), U-79C(7.5-8.0), U-47(19.5-20), U-47(6-7), U-18(2.5-3.0), U-18(19.5-20.0)	J
F2K010000-488B	Uranium-235	0.22 ± 0.22	U-99 (11-11.5), U-96B (1.5-2.5), U-96B (1.5-2.5)-DUP, U-96B (1.5-2.5)-DUP-MD, U-95 (2.5-3.5), U-108 (1.5-2.5), U-100 (3.5-4), U-42 (1-2), U-100B (3.5-4), U-75E (11.5-12), U-42 (14-18)	J
F2K010000-489B	Thorium-232	0.15 ± 0.21	U-105 (1-1.5), U-105 (1.5-2), U-112 (1.5-2), U-112 (2-2.5), U-109(19.5-20), U-114(19-20)-DUP, U-43(19-20), U-54(19.5-20)	J
F2K010000-480B	Uranium-235	0.18 ± 0.23	U-113B(1-2), U-109(2-2.5), U-109(19.5-20), U-94(2.5-4), U-121(19.5), U-121(1.5-2), U-111(1.5-2)	J
F2K120000-284B	Thorium-232	0.11 ± 0.13	U-127(2-3), U-129(2-2.5), U-129(6.5-7), U-130 (1.5-2.5), U-130 (21.5-22.5), U-133 (2.5-3.5), U-131 (0.5-2), U-131 (18.5-19.5), MSB-350, U-135 (7-8), U-132 (12-13), U-132 (12-13)-DUP	J

Notes:
pCi/g indicates picocurries per gram.
Uncertainty indicates total propagated uncertainty, which includes counting error and non-counting error.
MD indicates matrix duplicate.
DUP indicates field duplicate.

Table 3-5. *Blank Evaluation for Thorium/Uranium Analyses.*

Blank ID	Radionuclide	Blank Concentration ± Uncertainty (pCi/L)	Affected Samples	Action
F2J290000-226B	Thorium-230	0.169 ± 0.099	U-56(5.5-6.0), U-56(5.5-6.0)-MD, MSB-150(5.5-6.0), MSB-150(5.5-6.0)-MD, U-56(10.5-11.5), U-17(7-8), U-90(1-2)	J
F2K200000-135B	Thorium-230	0.136 ± 0.046	U-91(2.5-3), U-83(2.5-3.0), U-82(1.5-2.0), U-84(2.5-3.0), U-87(2.5-3.0), U-87(6.5-8.0), U-92 (2-2.5), U-100C (3-3.5), U-107B (3.5-4)	J
F2J290000-231B	Thorium-228	0.164 ± 0.077	U-93 (1-2.5), U-89 (2-3), U-102 (1.5-3), U-99 (11-11.5), U-96B (1.5-2.5)-DUP, U-95 (2.5-3.5), U-42 (14-18), U-42 (14-18)-DUP, U-105 (1-1.5), U-105 (1.5-2), U-112 (1.5-2), U-112 (2-2.5)	J
F2J290000-231B	Thorium-230	0.29 ± 0.11	U-93 (1-2.5), U-89 (2-3), U-102 (1.5-3), U-99 (11-11.5), U-96B (1.5-2.5), U-96B (1.5-2.5)-DUP, U-96B (1.5-2.5)-DUP-MD, U-95 (2.5-3.5), U-42 (14-18), U-42 (14-18)-DUP, U-42 (14-18)-DUP-MD, U-105 (1-1.5), U-105 (1.5-2), U-112 (1.5-2), U-112 (2-2.5)	J
F2J290000-223B	Thorium-228	0.13 ± 0.10	U-113B(1-2), U-113B(1-2)-MD, U-109(2-2.5), U-94(11.5-12), U-94DUP(11.5-12), U-110(1-1.5), U-110(10-12.5), U-115(18.5-19.5), U-115DUP(18.5-19.5), U-117(39.5-40)	J
	Thorium-230	0.29 ± 0.11	U-113B(1-2), U-113B(1-2)-MD, U-97(2.5-3.5), U-109(2-2.5), U-94(11.5-12), U-94DUP(11.5-12), U-110(1-1.5), U-110(10-12.5), U-115(18.5-19.5), U-115DUP(18.5-19.5), U-115(2-3), U-117(1-2.5), U-117(39.5-40)	J
F2K220000-142B	Thorium-228	0.107 ± 0.062	U-53(2.5-3.5), U-53(2.5-3.5)-DUP, U-49(2.0-3.0)	J
	Thorium-230	0.115 ± 0.060	U-53(2.5-3.5), U-53(2.5-3.5)-DUP, U-53(19.5-20), U-49(2.0-3.0), U-49(19.0-20.0), U-44(19-20)	J
F2K220000-143B	Uranium-238	0.077 ± 0.056	U-53(2.5-3.5), U-53(2.5-3.5)-DUP, U-53(19.5-20), U-49(2.0-3.0), U-49(19.0-20.0)	J
F2K250000-128B	Thorium-228	0.036 ± 0.027	U-36 (14-16), U-36 (14-16) (DUP), U-132 (14.5-16), U-132 (23-24)	J

Table 3-5. *Blank Evaluation for Thorium/Uranium Analyses.*				
Blank ID	***Radionuclide***	***Blank Concentration ± Uncertainty (pCi/L)***	***Affected Samples***	***Action***
	Thorium-230	0.112 ± 0.045	U-36 (14-16), U-36 (14-16) (DUP), U-132 (14.5-16), U-132 (23-24)	J
F2K250000-130B	Uranium-238	0.034 ± 0.031	U-36 (14-16)	J
F2L300000-283B	Thorium-230	0.37 ± 0.15	U-140B (2-3), U-140B (2-3)-DUP, U-140B (7.5-8), U-136 (2-3), U-142 (1.5-2.5), U-142 (3-4), U-145 (2-3.5), U-145 (19-20)	J
F2L300000-282B	Uranium-238	0.016 ± 0.014	U-140B (7.5-8), U-145 (19-20)	J

Notes:
pCi indicates picocurries.
Uncertainty indicates total propagated uncertainty, which includes counting error and non-counting error.
MD indicates matrix duplicate.
DUP indicates field duplicate.

3.3.3. Tracer Recovery

The tracer recoveries for several samples were outside the 50-100% recovery criteria. In accordance with the radiochemistry guidelines, results for the affected samples were qualified as "J" and "UJ". The samples qualified due to tracer recovery exceedances are summarized in Table 3-6.

Table 3-6. *Tracer Recovery Evaluation for Thorium/Uranium Analyses.*			
Sample ID	***Analysis***	***% R***	***Action***
U-32 (2.5-3.0)	Thorium	36	J
U-32 (2.5-3.0)-MD	Thorium	30	J
U-56(5.5-6.0)-MD	Thorium	39	J
U-56(10.5-11.5)	Thorium	107	J/UJ
U-133 (2.5-3.5)	Thorium	103	J
U-5A (1-15)	Uranium	29	J
U-39 (1.5), U-20(2.5-3.0)	Uranium	32	J
U-59 (6-1.5)	Uranium	23	J
U-61 (6-1.5)	Uranium	25	J
U-75 (7.0-7.5)	Uranium	33	J
U-13(1-2)	Uranium	21	J
U-12(2-3), U-83(2.5-3.0), U-132 (13-13.5)	Uranium	34	J
U-17(7-8), U-93 (1-2.5), U-102 (1.5-3), U-115(2-3), U-36 (14-16) (DUP)	Uranium	46	J
U-19(2-3.5), U-95 (2.5-3.5), U-117(1-2.5)	Uranium	43	J
MSB-160, U-99 (11-11.5)	Uranium	47	J
U-91(2.5-3), U-114(6-7)	Uranium	31	J
U-82(1.5-2.0), U-105 (1-1.5), U-113B(1-2)	Uranium	49	J
U-87(2.5-3.0)	Uranium	27	J
U-96B (1.5-2.5)-DUP-MD	Uranium	45	J

Table 3-6. *Tracer Recovery Evaluation for Thorium/Uranium Analyses.*

Sample ID	Analysis	% R	Action
U-42 (1-2)	Uranium	40	J
U-109(2-2.5)	Uranium	35	J
U-110(1-1.5)	Uranium	38	J
U-115DUP(18.5-19.5)	Uranium	46	J/UJ

Notes:
% R indicates percent recovery.
MD indicates matrix duplicate.
DUP indicates field duplicate.

3.3.4. Radionuclide Quantitation and Detection Evaluation

Although the minimum sample size used to provide representative subsampling for alpha spectrometry is 1.0 gram for soil samples, the laboratory used less than 1.0 gram for several samples, due to the presence of high levels of target radionuclides. As a result of the smaller sample size, some MDCs exceed the project-specific reporting limits. The affected sample results were qualified as estimated (J and UJ), as summarized in Table 3-7.

Table 3-7. *Sample Size Evaluation for Thorium/Uranium Analyses.*

Sample ID	Analysis	Sample Size	Action
U-67 (2-2.5), U-34 (3-3.5), U-46(2.5-3)	Uranium	Less than 1.0 gram	J
U-56(5.5-6.0), U-17(7-8), U-19(2-3.5), MSB-160, U-90(1-2), U-83(2.5-3.0), U-82(1.5-2.0), U-87(2.5-3.0), U-93 (1-2.5), U-89 (2-3), U-102 (1.5-3), U-99 (11-11.5), U-96B (1.5-2.5), U-96B (1.5-2.5)-DUP, U-96B (1.5-2.5)-DUP-MD, U-95 (2.5-3.5), U-42 (1-2), U-42 (14-18)-DUP, U-42 (14-18)-DUP-MD, U-105 (1-1.5), U-105 (1.5-2), U-112 (1.5-2), U-112 (2-2.5), U-113B(1-2), U-113B(1-2)-MD, U-97(2.5-3.5), U-110(1-1.5), U-115(2-3), U-117(1-2.5), U-49(2.0-3.0), U-44(3-4), U-114(1.5-4), U-114(6-7), MSB-210, U-36 (14-16), U-36 (14-16) (DUP), U-133 (2.5-3.5), U-131 (0.5-2), MSB-350, U-132 (12-13), U-132 (13-13.5), U-132 (23-24)	Thorium, Uranium	Less than 1.0 gram	J
U-56(10.5-11.5), U-87(6.5-8.0), U-42 (14-18), U-94(11.5-12), U-94DUP(11.5-12), U-110(10-12.5), U-115(18.5-19.5), U-115DUP(18.5-19.5), U-117(39.5-40), U-53(2.5-3.5), U-53(2.5-3.5)-DUP, U-53(19.5-20), U-49(19.0-20.0), U-44(19-20), U-114(19-20), U-132 (14.5-16), U-140B (2-3), U-140B (2-3)-DUP, U-140B (7.5-8), U-136 (2-3), U-142 (1.5-2.5), U-142 (3-4), U-145 (2-3.5), U-145 (19-20)	Thorium, Uranium	Less than 1.0 gram	J/UJ

Notes:
MD indicates matrix duplicate.
DUP indicates field duplicate.

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J and UJ) due to data validation QA/QC exceedances should be considered conditionally usable.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI, 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. For the radiochemistry analyses, none of the data were rejected due to precision non-conformances.

LCS recoveries indicate the accuracy of the data. For the radiochemistry analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. None of the radiochemistry data were rejected due to representativeness non-conformances.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. Sensitivity requirements were generally met for the sample data in this project. Several alpha spectrometry analyses for thorium and uranium were performed using reduced sample sizes, due to the presence of high levels of target radionuclides. This resulted in elevated MDCs. None of the radiochemistry data were rejected due to the sensitivity non-conformances.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. Have all holding times been met?

The holding times were met for the radiochemistry analyses.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

The laboratory used the laboratory control limits during the analyses performed for this sampling event. QA/QC deviations and qualifications performed on the sample data are discussed in Chapter 3. Major non-conformances were not detected for the radiochemistry data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USDOE methods are used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for gamma analyses performed for this sampling event, which met data user and client needs. However, the laboratory used their SOPs for alpha spectrometry analyses, which are equivalent to the USDOE methods, but with some minor modifications. The modifications are not considered significant enough to jeopardize the usability of the data.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The evaluation of selected raw data confirmed information provided in the data packages.

6. Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines as listed in Section 1.

References

GTE Operations Support Incorporated (GTEOSI). 2002. *Soil Remediation Program Work Plan (QAPP: Appendix H), Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1,* Revision 2, October 2002.

Science Applications International Corporation (SAIC). 1992. *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyzes*, 143-ARCS-00.08, Revision 06. Oak Ridge, Tennessee.

United States Department of Energy (USDOE).1997. *Environmental Measurements Laboratory (EML) Procedures Manual,* 28th Edition, Volume 1. New York, New York.

United States Department of Energy (USDOE) 1995. *Guidance for Radiochemical Data Validation*, Draft RD4, Gaithersburg, Maryland.

United States Environmental Protection Agency (USEPA). 1992. USEPA Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), 540/1-891002. Washington D.C.

VOLATILE ORGANIC COMPOUNDS

DATA USABILITY SUMMARY REPORT

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Executive Summary

This report addresses data quality for soil samples collected at the former Sylvania Electric Products Incorporated facility (the Site) in Hicksville, New York. Sample collection activities were conducted by URS Corporation (URS) from October 13, 2002 through December 11, 2002.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for Volatile Organic Compound (VOC) analyses using United States Environmental Protection Agency (USEPA) guidance methods. The analytical data generated for this investigation were evaluated by URS using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance and the Site-specific Quality Assurance Project Plan (QAPP). Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- *Soil Remediation Program Work Plan, Revision 2 (QAPP– Appendix H)*, GTE Operations Support Incorporated. October 2002;
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;
- *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008, October 1999;
- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and
- *United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review*, SOP No. HW-6, Revision #11 (USEPA 1996a)

Professional judgment was used to qualify results as estimated ("J" or "UJ") in some cases where the overall quality of data was suspect due to commonly accepted or standardized practices employed by the laboratory. Since the guidance documents used as reference for the validation somewhat differ in the type of qualification applied to data, URS applied qualifiers generally as a conservative approach. Method non-conformances included exceedances of the relative percent standard deviation for the initial calibrations, the percent differences of the continuing calibrations, the percent recoveries of the system monitoring compounds, the internal standard values, and matrix spike/matrix spike duplicate percent recoveries. Affected data, however, were not rejected if other supporting quality control data indicated acceptable quality control results.

Additionally, most laboratory method blanks contained low level contamination from recurring laboratory contaminants such as acetone, toluene, and methylene chloride. The presence of these contaminants affected many project samples and qualification of associated results was performed to show the relationship between the laboratory contamination and the uncertainty of the actual project sample result. Similarly, the project trip blanks and field blanks contained low-levels of some of the same contaminants as were seen in the laboratory method blanks. Again, URS qualified the affected data to show the potential impact on the final sample results.

Other quality issues requiring data validation qualification included removal of results from the database that exceeded the laboratory calibration range (i.e., qualified with an "E" by the laboratory), and qualification of all tentatively identified compounds (TICs) as estimated. Results from these data sets are qualitative only, and not considered usable for quantitative assessments, in particular, risk screening evaluations.

None of the exceedances of method non-conformances were significant enough to jeopardize the usability of the data. Most analytical results summarized in Appendix A (with the exception of TIC results) are usable based on the findings listed in this Data Usability Summary Report (DUSR).

Overall, 100 percent of the VOC data retained in the database as final data, was determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J or UJ) due to data validation QA/QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met.

1. Introduction
1.1. Sample Identification

This report addresses the results of a data quality evaluation for soil samples collected at the Site in Hicksville, New York. Sample collection activities were conducted by URS from October 13, 2002 through December 11, 2002.

The SDG (laboratory package number), field identification, and laboratory identification of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Client ID***	***Laboratory ID***	***Analysis Requested***
F2J140174	U-2 (32-34)	F2J140174001	VOCs
	U-35B (3-5) *Actual Field ID U-35B (3.5)*	F2J140174004	VOCs
	TRIP BLANK 10-08-02	F2J140174008	VOCs
	U-38 (2.8-3.0)	F2J140174013	VOCs
	U-15 (38-40)	F2J140174014	VOCs
	U-31 (3.8-4.0)	F2J140174016	VOCs
	U-20 (19.5-19.8)	F2J140174018	VOCs
	U-22 (7.5)	F2J140174019	VOCs
	U-36 (12-14)	F2J140174021	VOCs
	U-16A (15.5-18.8)	F2J140174023	VOCs
F2J140175	U-32 (3.5)	F2J140175004	VOCs
	U-33 (4)	F2J140175005	VOCs
	U-48B (6-12)	F2J140175012	VOCs
	U-1 (4)	F2J140175018	VOCs
	PC-1 *Field Duplicate of U-1 (4)*	F2J140175021	VOCs
	U-4 (7.5)	F2J140175023	VOCs
	U-3 (4)	F2J140175026	VOCs
	U-6 (15)	F2J140175030	VOCs
	U-5B (8)	F2J140175033	VOCs
	TRIP BLANK 10-10-02	F2J140175034	VOCs
	U-39 (4)	F2J140175035	VOCs

Table 1-1: Sample Cross-Reference List			
Package Identification	**Client ID**	**Laboratory ID**	**Analysis Requested**
F2J140191	U-60 (7.5-8.0)	F2J140191002	VOCs
	U-59 (3.5)	F2J140191006	VOCs
	U-61 (7.5)	F2J140191010	VOCs
	U-7 (2-2.5)	F2J140191014	VOCs
	U-58 (4.5)	F2J140191018	VOCs
	U-11 (4)	F2J140191027	VOCs
	U-9 (16)	F2J140191030	VOCs
F2J150204	U-27 (6-6.5)	F2J150204002	VOCs
	U-24 (5-5.6)	F2J150204003	VOCs
	U-24 (11.5-12)	F2J150204004	VOCs
	U-64 (5.5-6)	F2J150204006	VOCs
	U-64 (11.5-12)	F2J150204007	VOCs
	U-65B (6)	F2J150204010	VOCs
	U-65B (1.5-2)	F2J150204011	VOCs
	U-68 (4)	F2J150204016	VOCs
	U-68 (0.5-1)	F2J150204017	VOCs
	U-69 (0.5)	F2J150204021	VOCs
F2J150229	U-8 (4)	F2J150229001	VOCs
	U-8 (15.5-16)	F2J150229002	VOCs
	U-63 (8)	F2J150229004	VOCs
	U-62 (7)	F2J150229007	VOCs
	U-30 (3)	F2J150229011	VOCs
	U-28 (7-7.5)	F2J150229015	VOCs
	U-29 (4)	F2J150229018	VOCs
	U-29 (7)	F2J150229019	VOCs
	U-23 (2.5)	F2J150229020	VOCs
	U-23 (11)	F2J150229021	VOCs
	U-26 (3.5)	F2J150229025	VOCs

Table 1-1: Sample Cross-Reference List			
Package Identification	**Client ID**	**Laboratory ID**	**Analysis Requested**
	PUC-4* *Actual Field ID PMC-4* *Field Duplicate of U-26 (3.5)*	F2J150229028	VOCs
F2J150229	U-25 (7.5)	F2J150229029	VOCs
	U-25 (10.5)	F2J150229030	VOCs
F2J150262	U-70 (6-12)	F2J150262003	VOCs
	U-71 (6-12)	F2J150262004	VOCs
	U-72 (7.5-8.0)	F2J150262007	VOCs
	U-73 (2.5-2.8)	F2J150262008	VOCs
	U-74 (4)	F2J150262013	VOCs
	U-75 (4-4.3)	F2J150262015	VOCs
	PMC-7 *Field Duplicate U-75 (4-4.3)*	F2J150262016	VOCs
	U-75B (6-6.3)	F2J150262017	VOCs
	U-42 (18-20)	F2J150262025	VOCs
	TRIP 10-14-02	F2J150262027	VOCs
	U-34 (18.5-19)	F2J150262031	VOCs
F2J160141	U-66 (3)	F2J160141001 F2J160141001REA	VOCs
F2J180170	U-46 (19-19.5)	F2J180170003	VOCs
	U-37 (18.5-19)	F2J180170006	VOCs
	PMC-8 (DUP) *Field Duplicate of U37 (18.5-19)*	F2J180170007	VOCs
	U-41 (3.5-3.8)	F2J180170009	VOCs
	U-40 (11.5-12)	F2J180170014	VOCs
	U-14 (2-2.5)	F2J180170020	VOCs
	U-76 (6.5-7.0)	F2J180170023	VOCs
	U-13 (8.5-9.0)	F2J180170026	VOCs
	U-12 (7.5-8)	F2J180170030	VOCs
F2J210112	U-57 (3.5-4.0)	F2J210112001	VOCs
F2J210147	U-56 (18.5-19.0)	F2J210147009	VOCs
	U-57 (13.5-14.0)	F2J210147014	VOCs
	U-47 (16)	F2J210147021	VOCs

Table 1-1: Sample Cross-Reference List			
Package Identification	**Client ID**	**Laboratory ID**	**Analysis Requested**
	U-18 (19.0-19.5)	F2J210147030	VOCs
	U-17 (19-19.5)	F2J210147033	VOCs
	U-81 (7-7.3)	F2J210147039	VOCs
F2J210147	U-90 (2-2.3)	F2J210147040REA	VOCs
	U-91 (2-2.3)	F2J210147041	VOCs
	TRIP BLK 10-18-02	F2J210147045	VOCs
	U-84 (7.5)	F2J210147057	VOCs
	U-87 (5.5-8)	F2J210147058	VOCs
	U-88 (4.4.5)	F2J210147060	VOCs
	U-19 (18.5-19.0)	F2J210147061	VOCs
F2J220176	U-96B (19.5-20)	F2J220176001	VOCs
F2J220241	TRIP BLANK 10-19-02	F2J220241001	VOCs
	U-21 (16-16.5)	F2J220241004	VOCs
	U-86 (15.5-16)	F2J220241005	VOCs
	U-92 (19-19.5)	F2J220241006	VOCs
	U-93 (19.5-20)	F2J220241007	VOCs
	ADT RIG	F2J220241008	VOCs
	U-101 (11.5-12)	F2J220241009	VOCs
	U-101 (5.5-6)	F2J220241010	VOCs
	U-100 C (19.5-20)	F2J220241013	VOCs
	U-100C (13.5-14)	F2J220241014	VOCs
	U-99 (12-12.5)	F2J220241015	VOCs
	U-99 DUP (12-12.5) *Field Duplicate of U-99 (12-12.5)*	F2J220241016	VOCs
	U-96B (14-15)	F2J220241017	VOCs
	U-96B DUP (14-15) *Field Duplicate of U-96B (14-15)*	F2J220241018	VOCs
	U-103 (7.5-8)	F2J220241019	VOCs
	U-95 (19.5-20)	F2J220241020	VOCs
	U-108 (15)	F2J220241022	VOCs
	U-108 (18)	F2J220241023	VOCs

Table 1-1: Sample Cross-Reference List

Package Identification	Client ID	Laboratory ID	Analysis Requested
	U-107B (19)	F2J220241025	VOCs
	U-98 (12)	F2J220241028	VOCs
	U-105 (5)	F2J220241029	VOCs
	U-112 (5)	F2J220241031	VOCs
F2J250192	U-113 (7.5-8)	F2J250192001	VOCs
	U-97 (8)	F2J250192002	VOCs
	U-109 (6-7)	F2J250192003	VOCs
	U-106 (7.5-8)	F2J250192004	VOCs
	U-94DUP (10) *Field Duplicate of U-94 (10)*	F2J250192005 F2J250192005REA	VOCs
	U-94 (10)	F2J250192006 F2J250192006REA	VOCs
	U-110 (12)	F2J250192007	VOCs
	U-110 (2.5-3)	F2J250192008 F2J250192008REA	VOCs
	U-121 (20)	F2J250192009	VOCs
	U-111 (12)	F2J250192010	VOCs
	U-74B (20)	F2J250192011 F2J250192011REA	VOCs
	U-115 (19.5)	F2J250192013	VOCs
	U-117 (28)	F2J250192014	VOCs
	TRIP BLANK 10-23-02	F2J250192015	VOCs
	U-117 (39)	F2J250192016	VOCs
F2J300159	U-53 (18.5-19)	F2J300159001	VOCs
	U-52 (18.5-19)	F2J300159002	VOCs
	TRIP BLANK 10-28-02	F2J300159003	VOCs
	U-51 (18.5-19)	F2J300159004	VOCs
	U-50 (19-19.5)	F2J300159005	VOCs
	U-49 (18.5-19.0)	F2J300159006	VOCs
	U-122 (18.5-19.0)	F2J300159007	VOCs
	U-118 (21-21.5)	F2J300159008	VOCs
	U-118 (39.5-40)	F2J300159009	VOCs

Table 1-1: Sample Cross-Reference List			
Package Identification	**Client ID**	**Laboratory ID**	**Analysis Requested**
	U-44 (17-17.5)	F2J300159010	VOCs
	U-114 (15-15.5)	F2J300159011	VOCs
	U-114 (18.5-19)	F2J300159012REA	VOCs
	U-43 (18.5-19)	F2J300159013	VOCs
	U-54 (3.5-4)	F2J300159016	VOCs
F2K010208	U-120 (8.5-9)	F2K010208001	VOCs
	U-120 (18.5-19)	F2K010208002	VOCs
	PMC 300 (DUP) *Field Duplicate of U-120 (8.5-9)*	F2K010208003	VOCs
	U-120 (39-39.5)	F2K010208004	VOCs
	U-123 (10.5-11)	F2K010208005	VOCs
	U-55 (19-19.5)	F2K010208008	VOCs
	U-125 (18.5-19)	F2K010208009	VOCs
	U-125 (5-6)	F2K010208010	VOCs
	TRIP BLANK 10-30-02	F2K010208011	VOCs
	U-116 (18.5-19)	F2K010208012	VOCs
	U-126 (10.5-11)	F2K010208013	VOCs
	U-116 (39-39.5)	F2K010208014	VOCs
	U-124 (33-34)	F2K010208015	VOCs
	U-124 (38.5-40)	F2K010208016	VOCs
	U-124 (14-14.5)	F2K010208017	VOCs
	PMC-310 * *Field Duplicate of U-119 (18.5-19)*	F2K010208018	VOCs
	U-119 (18.5-19)	F2K010208019	VOCs
	U-128 (6-6.5)	F2K010208020	VOCs
	U-128 (19-19.5)	F2K010208021	VOCs
	U-128 (39.5-40)	F2K010208022	VOCs
	U-127 (19.5-20)	F2K010208023	VOCs
	U-129 (19.5-20)	F2K010208024	VOCs
	U-129 (39.5-40)	F2K010208026	VOCs
	U-130 (21-21.5)	F2K010208027	VOCs

"J" Indicates an estimated value or a value below the established reporting limit but above the method detection limit.

"E" This flag identifies compounds whose concentrations exceed the calibration range of the instrument for the specific analysis; data qualified with an "E" are qualitative only and not useable for quantitative purposes. All results qualified with an "E" were required to be re-analyzed using an applicable dilution and re-reported.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

"U" The chemical was not detected. Value shown is the reporting limit.

"J" Estimated concentration because the result was below the sample reporting limit or quality control criteria were not met.

"UJ" The chemical was not detected at or above the sample-reporting limit. However, the reporting limit is approximate and may or may not represent the actual limit of reporting necessary to accurately and precisely measure the chemical in the sample.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets site-specific criteria for data quality and use. Data quality was determined by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes whether the QA/QC parameters specified in Section 2.1 met validation criteria. A summary of the individual components of the review is described in the following sections.

3.2. Review of Validation Criteria

3.2.1. Completeness Review

The laboratory provided the analytical report in the New York State Department of Environmental Conservation (NYSDEC) format. Nearly all necessary documents were included in the report package including a case narrative summarizing the QC issues associated with the project analyses. In just a few isolated cases, the laboratory was asked to provide missing documentation, which included QC Summary forms 2, 3, 4, 5, 8 and an initial calibration run. The laboratory provided all information requested by URS.

3.2.2. Test Methods

The laboratory performed the analyses for most analyses using the analytical test methods listed in Section 1.3. These included SW846 Method 5030B (purge/trap analysis) followed by Method 8260B (gas chromatography/mass spectrometry). Most samples were analyzed using the low-level method, which utilizes a 5-gram sample volume.

3.2.3. Sample Receipt

The laboratory received 181 soil samples for VOC analysis between October 13, 2002 and December 11, 2002. The sample temperatures at the time of receipt were within the recommended temperature range of 4°C±2°C for all SDGs. Field and laboratory personnel completed the Chain-of-Custody (COC) documents correctly recording the signature, date, and time of custody transfer.

The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This Form identifies whether the containers were received undamaged, within the proper temperature range, at the proper pH, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory. In several instances the laboratory noted discrepancies between the COC and the samples received. In each instance the laboratory contacted the project manager.

Samples located in SDG F2J140175 had field identifications on the container labels that were different from the COC. The project manager instructed the laboratory to log in the sample according to the COC. The affected samples included: U-32 (19.5-20), U-48B (6-12), and U-48B (7.5-8).

The analysis requested on the COC did not match analysis requested on the containers submitted in SDG F2J140174. Two containers were submitted (1 VOC and 1 Metals) for U-22 (7.5). Metals were the only analysis requested on the COC. U-22 (7.5-8) had one container submitted, and the COC requested metals and VOC. The project manager was contacted and the laboratory was instructed to perform VOC analysis on sample U-22 (7.5). The laboratory incorrectly identified sample U-35B (3.5) as U-35B (3-5). This was not changed in the database to remain consistent with the hardcopy report.

In SDG F2J150204 the COC listed sample U-65B (11.5-12) twice. The COC did not include sample U-65 (2.5-3), for which a container was received. The project manager was contacted and sample U-65 (2.5-3) was added to the incoming sample list for the correct analyses and the second occurrence of U-65B (11.5-12) was removed.

3.2.4. Holding Times

The laboratory performed most VOC analyses within EPA-recommended holding time of 14-days, from the date of collection. However, several samples in SDG F2J250192 were reanalyzed by the laboratory (due to low levels of tetrachloroethene in the method blank) past the hold time. All results for the re-analyses were qualified as estimated (J or UJ) due to the potential loss of VOCs during extended storage. It should be noted that the results for the initial analysis for samples, U-110 (12), U-111 (12), U-115 (19.5), and U-117 (39), were retained in the final data set. Therefore, no results were retained in the final data set that were qualified due to hold time exceedances.

3.2.5. Analytical Results

For each sample tested, the laboratory provided the analytical test information using Contract Laboratory Program (CLP-like) format. This format requires the use of stylized forms to present critical information pertaining to the analyses performed. For all analytical results, the laboratory provided a Form I with the reported analytical results for the requested analyses. The Form I format shows the following information for organic analyses: the laboratory name; laboratory code; matrix; work order number; method; the sample identification; the laboratory file identification; the date the sample was received; the date the sample was analyzed; the dilution factor; the results; the method detection limits; the units of measure; and the laboratory qualifier (if any). Additional CLP forms were provided (e.g., II, III, etc.) to report applicable QC information for the analyses performed. The laboratory provided all the appropriate forms for the VOC method.

3.2.6. Traceability to Raw Data

Traceability of the VOC analyses is established by Form V (Instrument Performance Check). These forms list the project samples analyzed per laboratory batch processed and the corresponding QC samples performed with the project samples. All project samples for all SDGs were included on the applicable forms.

3.2.7. Instrument Tuning

The GC/MS instrument performance (i.e., "tuning data," or a check of mass spectral ion intensities using bromofluorobenzene (BFB) met method criteria. The instrument performance was checked prior to calibration and once every 12-hour shift for all analytical QC batches.

3.2.8. Initial Calibration

The initial calibrations (ICALs) met data validation criteria (i.e., relative response factors (RRFs) were greater than method criteria for the System Performance Check Compounds (SPCCs), and the relative percent standard deviations (%RSDs) were less than 15% for Calibration Check Compounds (CCCs)). Additionally, for all target compounds, method requirements recommend that RRFs be greater than 0.05 and that compounds be quantitated using the average relative response factor (avgRRF) only if the %RSD is less than 15%. The guidance method recommends that all compounds with a %RSD greater than 15% be quantitated with a calibration curve rather than the avgRRF. The laboratory does not prepare a calibration curve for compounds with a %RSD greater than 15% as recommended within the guidance method. Rather, the laboratory uses an alternate approach to the ICAL evaluation by evaluating the avgRRF (for all compounds calibrated). If their avgRRF is less than 15% (across all compounds) then the laboratory considers this to mean that they have met method criteria for the ICAL. Although method criteria were met, a conservative approach was used for the validation process and all results were qualified as estimated ("J" or "UJ") that were associated with the laboratory ICALs that had a %RSD greater than 15%. It should be noted that results (both detected and non-detected) are potentially biased due to this calibration routine. However, no %RSD values were greater than 50%. Values greater than 50% have the potential to cause significant bias to the data set. Since the %RSD values were outside criteria, but not excessive, the data were qualified as estimated. Table 3-1 shows the samples and compounds qualified as estimated. The final validation qualifier is shown in Table 7 of this Soils Report for each of the compounds listed in Table 3-1.

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Sample ID****	***Compounds***	***Action***
F2J140174	U-2 (32-34) U-35B (3-5) U-38 (2.8-3.0) U-15 (38-40) U-31 (3.8-4.0) U-20 (19.5-19.8) U-22 (7.5) U-36 (12-14) U-16A (15.5-18.8)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J140175	U-32 (3.5) U-33 (4) U-48B (6-12) U-1 (4) PC-1 U-4 (7.5) U-3 (4) U-6 (15) U-5B (8) U-39 (4)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J140191	U-60 (7.5-8.0) U-59 (3.5) U-61 (7.5) U-7 (2-2.5) U-58 (4.5) U-11 (4) U-9 (16)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J150204	U-27 (6-6.5) U-24 (5-5.6) U-24 (11.5-12) U-64 (5.5-6) U-64 (11.5-12) U-65B (6) U-65B (1.5-2) U-68 (4) U-68 (0.5-1) U-69 (0.5)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	Sample ID*	Compounds	Action
F2J150229	U-8 (4) U-8 (15.5-16) U-63 (8) U-62 (7) U-30 (3) U-28 (7-7.5) U-29 (4) U-29 (7) U-23 (2.5) U-23 (11) U-26 (3.5) PUC-4 U-25 (7.5) U-25 (10.5)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J150262	U-70 (6-12) U-71 (6-12) U-72 (7.5-8.0) U-73 (2.5-2.8) U-74 (4) U-75 (4-4.3) PMC-7 U-75B (6-6.3) U-42 (18-20) U-34 (18.5-19)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J160141	U-66 (3)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J180170	U-46 (19-19.5) U-37 (18.5-19) PMC-8 (DUP) U-41 (3.5-3.8) U-40 (11.5-12) U-14 (2-2.5) U-76 (6.5-7.0) U-13 (8.5-9.0) U-12 (7.5-8)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J210112	U-57 (3.5-4.0)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J210147	U-56 (18.5-19.0) U-57 (13.5-14.0) U-47 (16) U-18 (19.0-19.5) U-17 (19-19.5) U-81 (7-7.3) U-90 (2-2.3) REA U-91 (2-2.3) U-84 (7.5) U-87 (5.5-8) U-88 (4.4.5) U-19 (18.5-19.0)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	*Sample ID**	*Compounds*	*Action*
F2J220176	U-96B (19.5-20)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J220241	U-21 (16-16.5) U-86 (15.5-16) U-92 (19-19.5) U-93 (19.5-20) ADT RIG U-101 (11.5-12) U-101 (5.5-6) U-100 C (19.5-20) U-100C (13.5-14) U-99 (12-12.5) U-99 DUP (12-12.5) U-96B (14-15) U-96BDUP (14-15) U-103 (7.5-8) U-95 (19.5-20) U-108 (15) U-108 (18) U-107B (19) U-98 (12) U-105 (5) U-112 (5)	%RSD: Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J250192	U-113 (7.5-8) U-97 (8) U-109 (6-7) U-106 (7.5-8) U-94DUP (10) U-94 (10) U-110 (12) U-110 (2.5-3) U-121 (20) U-111 (12) U-74B (20) U-115 (19.5) U-117 (28) U-117 (39)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2J300159	U-53 (18.5-19) U-52 (18.5-19) U-51 (18.5-19) U-50 (19-19.5) U-49 (18.5-19.0) U-122 (18.5-19.0) U-118 (21-21.5) U-118 (39.5-40) U-44 (17-17.5) U-114 (15-15.5) U-114 (18.5-19) U-43 (18.5-19) U-54 (3.5-4)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	*Sample ID**	*Compounds*	*Action*
F2K010208	U-120 (8.5-9) U-120 (18.5-19) PMC 300 (DUP) U-120 (39-39.5) U-123 (10.5-11) U-125 (5-6)	%RSD: Acetone, Bromomethane, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2K010208	U-119 (18.5-19) U-128 (19-19.5) U-128 (39.5-40) U-127 (19.5-20)	%RSD: Methylene Chloride and trichloroethene	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
	U-55 (19-19.5) U-125 (18.5-19) U-116 (18.5-19) U-126 (10.5-11) U-116 (39-39.5) U-124 (33-34) U-124 (38.5-40) U-124 (14-14.5) PMC-310	%RSD: Acetone, Chloroethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
	U-128 (6-6.5) U-129 (19.5-20) U-129 (39.5-40) U-130 (21-21.5) U-130 (39.5-40) U-133 (39.5-40) U-133 (19.5-20) U-131 (19.5-20) U-131 (39.5-40) U-135 (19.5-20) PMC-400 U-132 (11-12) U-132 (19.5-20)	%RSD: Acetone, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2K040160	U-134 (19.5-20) U-134 (39.5-40)	%RSD: Acetone, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit
F2L120248	U-145 (1-1.5) U-145 (18.5-19) U-146 (3.5-4) U-146 (7.5-8) U-147 (8-9) U-147 (15.5-16)	%RSD: Acetone, Bromoform, Bromomethane, Chloromethane, Methylene Chloride	%RSD >15% UJ – non-detect results J – positive results above the laboratory reporting limit

Notes:
*Reanalysis samples were only included when the affected compounds from the reanalysis were included in the final data set.

3.2.9. Continuing Calibration

The continuing calibration (CCAL) verification analyses were performed with a mid-level standard immediately following the tuning check at the beginning of each 12-hour analytical sequence. The CCAL verification analyses met data validation criteria (i.e., RRFs were <0.05 for the SPCCs, and the percent differences (%Ds) from the avgRRF were < 20% for the CCCs) for all analytical QC batches. For the target compounds, the %Ds were greater than 20% for multiple compounds. Although method criteria were met, as a conservative approach the results associated with a CCAL that exceeded 20%D were qualified as estimated ("J" or "UJ"). The results for Table 3-2 show a summary of the samples and qualified parameters.

Also, two samples in SDG F2J250192 had QC issues based on the 12-hour CCAL analytical sequence. Sample U-117 (28) was injected past the 12-hour analytical sequence. The laboratory re-analyzed the sample using a medium-level extraction, due to target compounds exceeding the calibration curve. Since the medium level extraction was within the hold time, only the medium-level dilution was reported.

Sample U117 (39) was injected within the 12-hour analytical sequence; however, the analysis was completed after the 12-hour clock had expired. The laboratory reanalyzed the sample but the reanalysis was performed past the recommended hold time (14 days from collection). The laboratory reported both sets of results, but initial results were qualified as estimated for exceeding the CCAL and reanalysis results were qualified as estimated due to hold time exceedances. The initial results were retained in the final data set, because the sample was injected within the 12-hour analytical sequence. The initial results and the re-analysis results were comparable (RPD for tetrachloroethene results is 38%).

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*Sample ID**	*Compounds*	*Action*
F2J140174	U-2 (32-34) U-35B (3-5)	Bromomethane	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-38 (2.8-3.0) U-15 (38-40) U-31 (3.8-4.0) U-20 (19.5-19.8) U-22 (7.5) U-36 (12-14) U-16A (15.5-18.8)	Bromomethane, Methylene Chloride, 4-Methyl-2-Pentanone, 2- Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J140175	U-32 (3.5) U-33 (4) U-48B (6-12)	Bromomethane, Methylene Chloride, 4-Methyl-2-Pentanone, 2- Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-1 (4) PC-1 U-4 (7.5) U-3 (4) U-6 (15) U-5B (8) U-39 (4)	Bromomethane	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J140191	U-60 (7.5-8.0) U-59 (3.5) U-61 (7.5) U-7 (2-2.5) U-58 (4.5) U-11 (4) U-9 (16)	Chloromethane, 4-Methyl-2-Pentanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	Sample ID*	Compounds	Action
F2J150204	U-27 (6-6.5) U-24 (5-5.6) U-24 (11.5-12)	Bromoform, Methylene Chloride, 4-Methyl-2-Pentanone, 2- Hexanone, 1,1,2,2-TetraChloroethane	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-64 (5.5-6)	Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J150204	U-64 (11.5-12) U-65B (6) U-65B (1.5-2) U-68 (4) U-68 (0.5-1) U-69 (0.5)	Bromoform, Chloroethane, Methylene Chloride, 4-Methyl-2-Pentanone, 2- Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J150229	U-8 (4) U-8 (15.5-16) U-63 (8) U-62 (7) U-30 (3)	Chloroethane, 4-Methyl-2-Pentanone, 2-Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-28 (7-7.5) U-29 (4) U-29 (7) U-23 (2.5) U-23 (11) U-26 (3.5) PUC-4	Bromomethane, Methylene Chloride, 4-Methyl-2-Pentanone, 2-Hexanone, 2-Butanone, 1,1,2,2-2-Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-25 (7.5) U-25 (10.5)	Chloroethane, 2- Hexanone, Bromomethane, Methylene Chloride, 4-Methyl-2-Pentanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J150262	U-70 (6-12) U-71 (6-12) U-72 (7.5-8.0) U-34 (18.5-19)	Bromoform, Chloroethane, Methylene Chloride, 4-Methyl-2-Pentanone, 2- Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-73 (2.5-2.8) U-75 (4-4.3) PMC-7 U-75B (6-6.3) U-42 (18-20)	Chloromethane, Chloroethane, Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-74 (4)	Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J160141	U-66 (3)	4-Methyl-2-Pentanone, 2- Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*Sample ID**	*Compounds*	*Action*
F2J180170	U-46 (19-19.5) PMC-8 (DUP) U-41 (3.5-3.8) U-40 (11.5-12)	Chloroethane, Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-37 (18.5-19) U-14 (2-2.5) U-76 (6.5-7.0) U-13 (8.5-9.0) U-12 (7.5-8)	Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J210112	U-57 (3.5-4.0)	Methylene Chloride, 4-Methyl-2-Pentanone, 2- Hexanone, 1,1,2,2-TetraChloroethane	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J210147	U-90 (2-2.3) REA U-84 (7.5) U-87 (5.5-8) U-88 (4.4.5) U-19 (18.5-19.0)	Chloromethane, Chloroethane, Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J220176	U-96B (19.5-20)	Bromoform, Chloroethane, Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J220241	U-21 (16-16.5)	Carbon Disulfide, Chloromethane, Chloroethane, Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-86 (15.5-16) U-92 (19-19.5) U-93 (19.5-20) ADT RIG U-101 (11.5-12) U-101 (5.5-6) U-100 C (19.5-20) U-100C (13.5-14) U-99 (12-12.5) U-99 DUP (12-12.5) U-96B (14-15) U-96BDUP (14-15) U-103 (7.5-8) U-95 (19.5-20) U-108 (15)	Carbon Disulfide, Chloromethane, Chloroethane, Methylene Chloride, 2-Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-108 (18) U-107B (19) U-98 (12) U-105 (5) U-112 (5)	Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	Sample ID*	Compounds	Action
F2J250192	U-113 (7.5-8) U-97 (8) U-109 (6-7) U-106 (7.5-8) U-94DUP (10) U-94 (10) U-110 (2.5-3) U-121 (20) U-111 (12) U-74B (20)	Bromomethane, Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-110 (12) U-111 (12) U-115 (19.5)	Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J250192	U-94DUP (10) REA U-94 (10) REA U-110 (2.5-3) REA U-74B (20) REA	4-Methyl-2-Pentanone, 2- Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-117 (39)	All VOCs completed past the 12-hour clock	UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2J300159	U-53 (18.5-19) U-52 (18.5-19) U-51 (18.5-19) U-50 (19-19.5) U-49 (18.5-19.0) U-43 (18.5-19) U-54 (3.5-4) U-122 (18.5-19.0) U-118 (21-21.5) U-118 (39.5-40) U-44 (17-17.5) U-114 (15-15.5) U-114 (15-15.5) REA U-114 (18.5-19) U-114 (18.5-19) REA	Methylene Chloride, 4-Methyl-2-Pentanone, 2- Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2K010208	U-120 (8.5-9) U-125 (5-6)	Methylene Chloride, 2-Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-120 (18.5-19) PMC 300 (DUP) U-120 (39-39.5) U-123 (10.5-11)	Chloroethane, Chloromethane, Methylene Chloride	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
	U-119 (18.5-19) U-128 (19-19.5) U-128 (39.5-40) U-127 (19.5-20)	Chloroethane, trans-1,2-Dichloroethene	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*Sample ID**	*Compounds*	*Action*
F2K010208	U-55 (19-19.5) U-125 (18.5-19) U-116 (18.5-19) U-126 (10.5-11) U-116 (39-39.5) U-124 (33-34) U-124 (38.5-40) U-124 (14-14.5) PMC-310 U-129 (19.5-20) U-129 (39.5-40) U-130 (21-21.5) U-130 (39.5-40) U-133 (39.5-40) U-133 (19.5-20) U-131 (19.5-20) U-131 (39.5-40) U-135 (19.5-20) PMC-400 U-132 (11-12) U-132 (19.5-20)	4-Methy-2-Pentanone, 2-Hexanone	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit
F2L120248	U-145 (1-1.5) U-145 (18.5-19) U-146 (3.5-4) U-146 (7.5-8) U-147 (8-9) U-147 (15.5-16)	Acetone, Chloromethane	%D > 20% UJ – all non-detect results J – all positive results above the laboratory reporting limit

Notes:
*Reanalysis samples were only included when the affected compounds were reported from the reanalysis.

3.2.10. Laboratory Method Blanks

In general, nearly all laboratory method blanks contained trace levels of one of more of the laboratory contaminants including 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, acetone, bromoform, methylene chloride, styrene, tetrachloroethene, and toluene. The corresponding project sample results for the identified contaminants were revised to non-detect results ("U" flag) if the associated sample results were less than 5 times the method blank results for laboratory contaminants in accordance with the QAPP (GTEOSI, 2002). Results below the laboratory PQL (qualified with a "JB") were revised to the PQL and qualified as non-detect (U). Results above the laboratory PQL (qualified with a "B") were revised to non-detect at the reported concentration. Nearly all project samples contained one or more of the laboratory method blank contaminants and thus were affected by this qualification practice. A summary of the samples and compounds that were revised for the VOCs is presented in Table 3-3. (Note: Project sample results that were not revised due to laboratory method blank contamination are not shown in this table.)

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	***Client ID****	***Compounds*****	***Action***
F2J140174	U-2 (32-34) U-35B (3-5) U-38 (2.8-3.0) U-38 (2.8-3.0) U-15 (38-40) U-15 (38-40) U-31 (3.8-4.0) U-20 (19.5-19.8) U-22 (7.5) U-36 (12-14) U-16A (15.5-18.8)	Acetone, Methylene Chloride	Revise "B" qualifier to "U" to indicate non-detect result
F2J140175	U-32 (3.5) U-33 (4) U-48B (6-12) U-48B (6-12) U-1 (4) PC-1 U-4 (7.5) U-3 (4) U-6 (15) U-5B (8) U-39 (4)	Acetone, Methylene Chloride	Revise "B" qualifier to "U" to indicate non-detect result
F2J140191	U-60 (7.5-8.0) U-61 (7.5) U-58 (4.5) U-11 (4) U-60 (7.5-8.0) U-59 (3.5) U-61 (7.5) U-7 (2-2.5) U-58 (4.5) U-11 (4) U-9 (16)	Acetone, Methylene Chloride	Revise "B" qualifier to "U" to indicate non-detect result
F2J150204	U-27 (6-6.5) U-24 (5-5.6) U-24 (11.5-12) U-64 (11.5-12) U-65B (6) U-65B (1.5-2) U-68 (4) U-69 (0.5)	Acetone, Bromoform, Methylene Chloride	Revise "B" qualifier to "U" to indicate non-detect result
F2J150229	U-8 (4) U-8 (15.5-16) U-63 (8) U-62 (7) U-30 (3) U-28 (7-7.5) U-29 (4) U-29 (7) U-23 (2.5) U-23 (11) U-26 (3.5) PUC-4 U-25 (7.5) U-25 (10.5)	Acetone, Methylene Chloride, Toluene	Revise "B" qualifier to "U" to indicate non-detect result

Table 3-3. *Evaluation of Laboratory Method Blank Results*			
Package Identification	***Client ID****	***Compounds*****	***Action***
F2J150262	U-70 (6-12) U-71 (6-12) U-72 (7.5-8.0) U-73 (2.5-2.8) U-75 (4-4.3) PMC-7 U-75B (6-6.3) U-42 (18-20) U-34 (18.5-19)	Acetone, Methylene Chloride	Revise "B" qualifier to "U" to indicate non-detect result
F2J160141	U-66 (3)	Methylene Chloride	Revise "B" qualifier to "U" to indicate non-detect result
F2J180170	U-46 (19-19.5) U-3 7(18.5-19) PMC-8 (DUP) U-41 (3.5-3.8) U-40 (11.5-12) U-14 (2-2.5) U-76 (6.5-7.0) U-13 (8.5-9.0) U-12 (7.5-8)	Methylene Chloride, Toluene	Revise "B" qualifier to "U" to indicate non-detect result
F2J210112	U-57 (3.5-4.0)	Methylene Chloride	Revise "B" qualifier to "U" to indicate non-detect result
F2J210147	U-56 (18.5-19.0) U-57 (13.5-14.0) U-47 (16) U-18 (19.0-19.5) U-17 (19-19.5) U-81 (7-7.3) U-90 (2-2.3) REA U-91 (2-2.3) U-84 (7.5) U-87 (5.5-8) U-88 (4.4.5) U-19 (18.5-19.0)	Methylene Chloride	Revise "B" qualifier to "U" to indicate non-detect result
F2J220241	U-21 (16-16.5) U-86 (15.5-16) U-92 (19-19.5) U-93 (19.5-20) ADT RIG U-101 (11.5-12) U-101 (5.5-6) U-100 C (19.5-20) U-100C (13.5-14) U-99 (12-12.5) U-99 U-96B (14-15) U-96B U-103 (7.5-8) U-95 (19.5-20) U-108 (15) U-108 (18) U-107B (19) U-98 (12) U-105 (5) U-112 (5)	1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Methylene Chloride, Toluene	Revise "B" qualifier to "U" to indicate non-detect result

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	*Client ID**	*Compounds***	*Action*
F2J250192	U-113 (7.5-8) U-97 (8) U-109 (6-7) U-106 (7.5-8) U-94DUP (10) U-94 (10) U-94 (10) U-110 (12) U-110 (2.5-3) U-121 (20) U-111(12) U-74B (20) U-115 (19.5) U-117 (28) U-117 (39)	1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Acetone, Methylene Chloride, Tetrachloroethene, Toluene	Revise "B" qualifier to "U" to indicate non-detect result
F2J300159	U-53 (18.5-19) U-51 (18.5-19) U-50 (19-19.5) U-49 (18.5-19.0) U-122 (18.5-19.0) U-118 (21-21.5) U-118 (39.5-40) U-44 (17-17.5) U-114 (15-15.5) U-114 (18.5-19) U-43 (18.5-19) U-54 (3.5-4)	Acetone, Methylene Chloride, Toluene	Revise "B" qualifier to "U" to indicate non-detect result
F2K010208	U-120 (8.5-9) U-120 (18.5-19) PMC 300 (DUP) U-120 (39-39.5) U-123 (10.5-11) U-125 (5-6) U-119 (18.5-19) U-128 (19-19.5) U-128 (39.5-40) U-127 (19.5-20) U-55 (19-19.5) U-125 (18.5-19) U-116 (18.5-19) U-126 (10.5-11) U-116 (39-39.5) U-124 (33-34) U-124 (38.5-40) U-124 (14-14.5) PMC-310 U-128 (6-6.5) U-129 (19.5-20) U-129 (39.5-40) U-130 (21-21.5) U-130 (39.5-40) U-133 (39.5-40) U-133 (19.5-20)	1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Acetone, Methylene Chloride, Styrene, Toluene	Revise "B" qualifier to "U" to indicate non-detect result

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	Client ID*	Compounds**	Action
F2K010208	U-131 (19.5-20) U-131 (39.5-40) U-135 (19.5-20) PMC-400 U-132 (11-12) U-132 (19.5-20)	1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Acetone, Methylene Chloride, Styrene, Toluene	Revise "B" qualifier to "U" to indicate non-detect result
F2L120248	U-145 (1-1.5) U-145 (18.5-19) U-146 (7.5-8) U-147 (8-9) U-147 (15.5-16)	Acetone, Methylene Chloride, Toluene	Revise "B" qualifier to "U" to indicate non-detect result

Notes:
*Reanalysis samples were only included when the affected compounds from the reanalysis were included in the final data set.
**Not all compounds listed in column 3 affect all project samples shown. Table 7 of this Soils Report shows the final qualifiers assigned to the project sample results based on the validation criteria for all QC sample analyses.

3.2.11. Laboratory Control Sample Results

The laboratory analyzed a laboratory control sample (LCS) for most QC batches. The laboratory did not analyze a LCS for the medium-level extraction in SDG F2J160141. The case narrative stated:

> *"Client requested the sample to be run and reported as quick as possible. The lab loaded the sample along with some other soils intending for the analytical sequence to be a low-level soil clock. The quick turn sample turned out to be well over the calibration range and needed a medium-level preparation. Since this was the first sample run for the client, the lab anticipated that many of the samples would require medium-level extractions and let the sequence run. When it became evident that this was the only medium level sample the lab performed the medium-level extraction and placed it in the sequence with the low level soils."*

> *"Normally the medium-level sample will also be extracted with a medium-level blank, LCS, and MS/MSD. The medium-level prep utilizes the same standards (parents), water, and pre tested methanol as the low level QC. The compound of interest for this medium level sample is tetrachloroethene. This compound is rarely (if ever) detected in a blank and is rarely (if ever) recovered out of the medium level prep LCS recovery limits. The sample will be reported using the low level QC for software reporting purposes. Also all lab personnel have been reminded of the S.O.P.'s for medium level extractions, which include an extraction blank, LCS, and MS/MSD per analytical sequence/clock."*

URS has identified that this is not in compliance with SW-846 Method 8260B, or the QAPP (GTEOSI, 2002) because an LCS was not performed with the batch. In URS's professional opinion, and based upon the laboratory case narrative, the affected sample result for tetrachloroethene in sample U-66 (3) was retained in the final data set and qualified as estimated.

The percent recoveries were within laboratory control limits for almost all QC batches. Where recoveries exceeded laboratory control limits, the associated data were qualified as estimated ("J" or "UJ") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results were qualified as estimated; non-detects were not qualified; 2) if the percent recovery was below the lower control limit, both positive and non-detect results were qualified ("J" or "UJ"). When a LCS duplicate was performed an evaluation of the precision of the laboratory analysis procedure was made based on the relative percent difference (RPD) calculated for the original and duplicate results. When the RPDs exceeded the laboratory control limits (20%) the associated results were qualified as estimated ("J" or "UJ"). Table 3-4 shows the samples that were qualified as estimated due to LCS percent recoveries exceeding laboratory control limits.

Table 3-4. *Evaluation of Laboratory Control Sample Results*

Package Identification	***Client ID***	***Compound***	***Action***
F2K010208	U-135 (19.5-20) U-131 (39.5-40) U-133 (19.5-20)	Bromoform	"UJ" (low %R)
F2J160141	U-66 (3) (REA)	Tetrachloroethene	"J" (No LCS performed)
F2J250192	U-117 (28)	Bromomethane, Chloroethane	"UJ" (high RPD)
F2K040160	U-134 (19.5-20) U-134 (39.5-40)	Bromoform	"UJ" (low %R)

3.2.12. Matrix Spike/Matrix Spike Duplicate Analyses

Multiple project samples were submitted for MS/MSD analyses. Where recoveries exceeded laboratory control limits, the associated data were qualified as estimated ("J" or "UJ") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results were qualified as estimated; 2) if the percent recovery was below the lower control limit, both positive and non-detect results were qualified as estimated; 3) if the RPD exceeded laboratory control limits both positive and non-detect results were qualified as estimated ("J" or "UJ"). No qualification of data is required when percent recoveries are above the upper control limit and the VOC results are non-detect. Table 3-5 shows the samples that were qualified as estimated due to MS/MSD percent recoveries or RPDs exceeding criteria. Table 3-5 does not list cases where the MS/MSD percent recoveries were greater than the upper control limit and the results were non-detect.

Table 3-5. *Evaluation of Matrix Spike/Matrix Spike Duplicate Sample Results*

Package Identification	***Client ID***	***Compound***	***Action***
F2J150204	U-64 (5.5-6)	1,1-Dichloroethene, Bromomethane, Chloroethane	"UJ" (high RPD)
F2J220241	U-92 (19-19.5)	Carbon Tetrachloride	"UJ" (low %R)
F2J250192	U-115 (19.5)	Methylene Chloride	"UJ" (low %R)
F2K010208	U-125 (18.5-19) U-135 (19.5-20)	Chloroform Chloroethane	"UJ" (low %R) "UJ" (high RPD)
F2K040160	U-134 (39.5-40)	Bromoform	"UJ" (low %R)

3.2.13. Field Duplicate Analyses

Ten project samples were submitted as field duplicates. An evaluation of the precision of the field sampling procedure (as well as the laboratory analysis procedure) was made based on the relative percent difference (RPD) calculated for the original and duplicate sample results. RPD calculations were made only when both results were above the laboratory reporting limits. The RPD values for all compounds were less than 100% (soil data evaluation criteria).

It should be noted that QAPP requirements (GTEOSI, 2002) specified that a field duplicate sample be collected at a rate of one sample for every twenty samples (collection rate of 5%). Ten field duplicates were required to be collected for the project since a total of 181 project samples were submitted for analysis. Ten field duplicates were submitted. The precision is considered acceptable because the field duplicate samples collected had RPD values of less than 100%.

3.2.14. Trip Blanks and Equipment Blanks

Multiple trip blanks were submitted for the soil sampling project. Many of the trip blanks that were submitted contained recurring contaminants, including acetone, methylene chloride, and toluene. The trip blanks were not used to assess the soil results. No equipment blank was submitted in accordance with the requirements of the QAPP (GTEOSI, 2002). It should be noted that the results and qualifiers for the trip blanks were retained to show data users the presence and concentrations of contamination. The contamination in the trip blanks, like the project samples, is potentially attributable to contamination from laboratory processing of samples, cross-contamination from samples during shipment, or contamination during the preparation of these QC samples (at the laboratory).

3.2.15. System Monitoring Compounds

The percent recoveries for the VOC surrogates were within laboratory control limits for most project samples. Several project samples had one of a total of four surrogate recoveries outside laboratory control limits. When one of four surrogate recoveries is either above or below laboratory control limits, qualification of VOC results is not required per USEPA guidance documents. In one sample, one surrogate was above the control limits and another surrogate was below the control limits. All results were qualified as estimated ("J" or "UJ"). The laboratory reanalyzed the sample as corrective action. Due to this and other QC issues (see 3.2.16) the reanalysis results (performed within the hold-time) were retained in the final data set. Table 3-6 shows the sample and surrogate compounds that exceeded the laboratory control limits for percent recovery.

Table 3-6. *Evaluation of System Monitoring Compounds*

Package Identification	*Sample ID*	*System Monitoring Compound*	*Action*
F2J300159	U-114 (18.5-19)	Toluene-d8 and Dibromofluoromethane	Original analysis qualified as estimated Reanalysis results retained

3.2.16. Internal Standards

The responses of most internal standards associated with target compounds were within the range of 50-200% of the associated calibration verification for all project samples. All internal standard retention times were within ± 30 seconds from that of the most recent calibration for all analyses. When internal standard responses exceeded the range of the associated calibration verification value the laboratory reanalyzed the samples. In all cases the reanalysis had acceptable recoveries. The reanalysis results for associated compounds were retained in the final dataset. Table 3-7 shows the samples and compounds that were affected by internal standard exceedances.

Table 3-7. *Evaluation of Internal Standard Values*			
Package Identification	***Sample ID***	***Compound***	***Action***
F2J210147	U-90 (2-2.3)	All Compounds	Original analysis qualified as estimated Reanalysis results retained
F2J250192	U-94DUP (10) U-94 (10)	1,1,2,2-Tetrachloroethene, 1,1,2-Trichloroethene, 2-Hexanone, Bromoform, Chlorobenzene, Ethylbenzene, styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloropropene, total Xylenes	Original analysis qualified as estimated Reanalysis results retained
	U-110 (2.5-3) U-74B (20)	1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1,2,2-Tetrachloroethene, 1,1,2-Trichloroethene, 2-Hexanone, Bromoform, Chlorobenzene, Ethylbenzene, styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloropropene, total Xylenes	Original analysis qualified as estimated Reanalysis results retained
F2J300159	U-114 (15-15.5) U-114 (18.5-19)	1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1,2,2-Tetrachloroethene, 1,1,2-Trichloroethene, 2-Hexanone, Bromoform, Chlorobenzene, Ethylbenzene, styrene, Tetrachloroethene, Toluene, trans-1,3-Dichloropropene, total Xylenes	Original analysis qualified as estimated Reanalysis results retained

3.2.17. Compound Identification and Quantitation of Results

The laboratory's evaluations of the gas chromatographs and mass spectra for the identified compounds were acceptable for all project samples.

Many of the samples had detection limits slightly above the DQOs due to correction for percent moisture. Some of the samples were initially analyzed at dilutions or using medium-level extractions, due to screening information. The affected samples U-64 (5.5-6), U-74 (4), U-117 (28) (10x dilution), U-117 (39) (5x dilution), and U-128 (6-6.5) (4x dilution) had detection limits above the DQOs. Two samples had all of the reanalysis results retained in the final data set due to quality control issues. These samples U-90 (2-2.3) and U-114 (18.5-19) had detection limits above the DQOs. Additionally, many project samples contained elevated concentrations of some target compounds that exceeded the calibration range for the VOC analysis. The laboratory reported and qualified these results with an "E" qualifier. As part of the laboratory's corrective action, the affected samples were reanalyzed using a medium-level extraction to obtain usable results within the established calibration curve range. In two cases, however, the re-analyses resulted in non-detect results for two parameters which were originally detected in the undiluted sample. The samples are U-110 (2.5-3), U-114 (15-15.5) and U-114 (18.5-19) and the affected compounds are *cis*-1,2-dichloroethene and 1,2-dichlorobenzene. Since "E" qualified data are not used for quantitative purposes, the re-analysis results were required to be reported ("U"-qualified results). The "U" qualified results had elevated reporting limits due to the diluted analysis. The data user should be aware of the presence of these two chemicals in the subject samples. A list of the re-analyzed samples and the affected parameters are listed in Table 3-8.

Table 3-8: Summary of Laboratory Re-Analyses			
Package Identification	**Client ID**	**Laboratory ID**	**Compound Reported From Re-Analysis**
F2J150204	U-65B (1.5-2)	F2J150204011REA	Tetrachloroethene
	U-69 (0.5)	F2J150204021REA	Total Xylenes
F2J150229	PUC-4	F2J150229028REA	Tetrachloroethene
	U-26 (3.5)	F2J150229025REA	Tetrachloroethene
F2J150262	PMC-7	F2J150262016REA	Tetrachloroethene
	U-75 (4-4.3)	F2J150262015REA	Tetrachloroethene
	U-75B (6-6.3)	F2J150262017REA	Tetrachloroethene
F2J160141	U-66 (3)	F2J160141001REA	Tetrachloroethene
F2J250192	U-94DUP (10)	F2J250192005REA	Tetrachloroethene
	U-94 (10)	F2J250192006REA	Tetrachloroethene
	U-110 (2.5-3)	F2J250192008REA	cis-1,2-Dichloroethene* Tetrachloroethene
	U-74B (20)	F2J250192011REA	Tetrachloroethene
F2J300159	U-114 (15-15.5)	F2J300159011REA	1,2-Dichlorobenzene* Tetrachloroethene
	U-114 (18.5-19)	F2J300159012REA	1,2-Dichlorobenzene* Tetrachloroethene
F2K010208	U-120 (8.5-9)	F2K010208001REA	Tetrachloroethene
	U-125 (5-6)	F2K010208010REA	Tetrachloroethene

*Results detected in an undiluted analysis but qualified with an "E" by the laboratory due to exceedances of the calibration curve range. Because of the large dilution performed to obtain results for another target compound (tetrachloroethene), these two compounds were reported as non-detect ("U"- qualified) at an elevated reporting limit. The compounds are present in the sample; however, an accurate quantity was not reported by the laboratory.

3.2.18. Tentatively Identified Compounds (TICs)

The laboratory was required to perform a library search for Tentatively Identified Compounds (TICs) present in the sample and QC matrices for the VOC analyses. TICs were identified most frequently in the laboratory method blanks and only in a few project samples. Since the TIC evaluation provides only the identity of a possible compound in the matrix and not the actual concentration of a compound, all TIC data should be considered qualitative (i.e., not usable for quantitative purposes). The "J" qualifier was added to all TIC results to indicate to the data user that the data are estimated. The TICs identified in the project and laboratory QC samples are shown in Attachment A.

4. Summary and Data Usability

This section summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the VOC data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to data validation QA/QC exceedances should be considered conditionally usable. TICs, qualified as "J," are not usable as there is only presumptive evidence of the compounds presence in the project sample.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI, 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration or detection limit of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. For the VOC analyses, none of the data were rejected due to precision non-conformances.

LCS recoveries indicate the accuracy of the data. For the VOC analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. None of the VOC data were rejected due to representativeness non-conformances.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. Sensitivity requirements were not met for several project samples due to the necessity of analyzing samples using significant dilutions. However, none of the VOC data were rejected due to sensitivity non-conformances.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. Have all holding times been met?

The holding times were met for the majority of VOC analyses. See Section 3.2.4 for sample and parameters qualified due to hold time exceedances.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

The laboratory used the laboratory control limits during the analyses performed for this sampling event. QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Major non-conformances were not detected for the VOC data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USEPA guidance methods be used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for the analyses performed for this sampling event, which met data user and client needs.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The evaluation of selected raw data confirmed the information provided in the data package.

6. Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines listed in Section 1.

References

GTE Operations Support Incorporated. 2002. *Soil Remediation Program Work Plan, Revision 2 (QAPP–Appendix H)*, October 2002

O'Brien & Gere Engineers, Inc. 2000. *Supplement to the Approved Work Plan (QAPP – Appendix C), Former Sylvania Electric Products Incorporated Facility Cantiague Rock Road, Hicksville, New York.* Syracuse, New York.

United States Environmental Protection Agency (USEPA). 1992. *USEPA Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)*, 540/1-891002. Washington D.C.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW846) USEPA, Final Update IIIA, April 1998;

USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, EPA 540-R-99-008, October 1999;

Analytical Services Protocol (ASP), New York State Department of Environmental Conservation (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and

United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review, SOP No. HW-6, Revision #11 (USEPA 1996a)

METALS

DATA USABILITY SUMMARY REPORT

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Executive Summary

This report addresses data quality for soils samples collected at the former Sylvania Electric Products Incorporated facility (the Site) in Hicksville, New York. Sample collection activities were conducted by URS Corporation (URS) from October 13, 2002 through December 11, 2002.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for metals analyses using United States Environmental Protection Agency (USEPA) guidance methods. The analytical data generated for this investigation were evaluated by URS using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance and the site-specific Quality Assurance Project Plan (QAPP). References are as follows:

- GTE Operation Support Incorporated. 2002. *Soil Remediation Program Work Plan, Former Sylvania Electric Products Facility, Revision 2 (QAPP– Appendix H)*, October 2002.
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;
- *CLP National Functional Guidelines for Inorganic Data Review*, USEPA, EPA 540-R-01-008, July 2002;
- *United States Environmental Protection Agency Region II Evaluation of Metals Data for the CLP 3/90*, USEPA 1992, and
- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000).

Professional judgment was used to qualify results as estimated (UJ) in some cases where the overall quality of data was suspected due to commonly accepted or standardized practices employed by the laboratory. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references: since the guidance documents used as a source of reference for the validation somewhat differ in the type of qualification applied to data, URS applied qualifiers generally as a conservative approach. Affected data, however, were not rejected since other supporting quality control data indicated acceptable quality control results. Specifically, method non-conformances included only exceedances of the matrix spike/matrix spike duplicate percent recoveries, contract required detection limit (CRDL) analysis, or field duplicate relative percent difference values. For several SDGs, the laboratory inadvertently did not follow the required sequence of analysis for the initial calibration and calibration check standard (per the requirements of ASP 2000). Although non-compliant with the guidance procedure, the resulting data is technically valid in the professional judgment of URS. The severity of the non-compliance is considered minor. Further explanations of this issue are described in Sections 3.2.7 and 3.2.9. All other QC analyses, including laboratory control samples, serial dilution analysis, and interference check sample analyses, were acceptable for the samples.

A few laboratory method blanks (i.e., preparation blanks) and continuing calibration blanks (CCBs) contained low concentrations of the target elements. The presence of these elements in specific method blanks affected a few project samples. Qualification of associated results was not necessary as the concentrations in the method blanks were significantly below the concentrations in the soil samples.

The relative percent difference between field duplicate results were assessed, also. One set of results was found to differ by more than 100% (QAPP criteria). Results were qualified as estimated to indicate the possibility of a non-homogenous sample matrix, laboratory imprecision during testing, and/or field imprecision during sampling.

None of the exceedances of method non-conformances were significant enough to jeopardize the usability of the data. All analytical results summarized in Appendix A are usable based on the findings listed in this Data Usability Summary Report (DUSR). No results for the metals analyses were rejected.

Overall, 100 percent of the metals data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met for the metals database.

1. Introduction
1.1. Sample Identification

This report addresses the results of a data quality evaluation for soil samples collected at the Site in Hicksville, New York. Sample collection activities were conducted by URS from October 13, 2002 through December 11, 2002.

The sample delivery group (package identification), field identification, laboratory identification and analyses requested were submitted for data validation are presented in Table 1-1.

***Table 1-1:** Sample Cross-Reference List*

Package Identification	*Field ID*	*Laboratory ID*	*Analysis Requested*
F2J140174	U-15 (14-16)	F2J140174011	TAL Metals
	U-16A (15.5)	F2J140174022	TAL Metals
	U-20 (19.5)	F2J140174017	TAL Metals
	U-22 (7.5)	F2J140174019	TAL Metals
	U-31 (11.5)	F2J140174015	TAL Metals
	U-35B (12)	F2J140174006	TAL Metals
	U-38 (19-0)	F2J140174012	TAL Metals
F2J140175	U-1 (5)	F2J140175019	TAL Metals
	U-32 (11.5-12)	F2J140175003	TAL Metals
	U-33 (12)	F2J140175007	TAL Metals
	U-4 (3.5)	F2J140175022	TAL Metals
	U-48C (5.5-6)	F2J140175011	Nickel
	U-5B (8)	F2J140175033	Nickel
	U-6 (15)	F2J140175030	Nickel
F2J140191	PMC-3	F2J140191023	TAL Metals
	U-36 (10-12)	F2J140191020	Nickel
	U-36 (2-4)	F2J140191019	TAL Metals
	U-59 (2.5)	F2J140191007	Nickel
	U-61 (2)	F2J140191011	Nickel
	U-7 (2)	F2J140191012	Nickel
	U-7 (7.5)	F2J140191013	Nickel
F2J140191	U-9 (2)	F2J140191029	Nickel

Table 1-1: Sample Cross-Reference List			
Package Identification	**Field ID**	**Laboratory ID**	**Analysis Requested**
F2J150229	U-30 (1.5-2)	F2J150229012	Nickel
	U-8 (4)	F2J150229001	Nickel
F2J180170	U-37(16-16.5)	F2J180170008	TAL Metals
	U-46(19-19.5)	F2J180170003	TAL Metals
F2J210147	PMC-10	F2J210147025	Nickel
	U-17 (16)	F2J210147034	TAL Metals
	U-18 (16)	F2J210147028	Nickel
	U-18 (19.0-19.5)	F2J210147027	TAL Metals
	U-19 (18)	F2J210147037	TAL Metals
	U-47 (15.5-16)	F2J210147024	Nickel
	U-56 (19.0-19.5)	F2J210147010	Nickel
	U-56 (4.5-5.0)	F2J210147007	Nickel
	U-57 (18.5-19.0)	F2J210147015	Nickel
	U-57 (4.5-5.0)	F2J210147013	Nickel
	U-82 (11-11.3)	F2J210147042	Nickel
	U-87 (5.8-6)	F2J210147059	Nickel
F2J220241	U-102 (7-7.5)	F2J220241012	Nickel
	U-105 (5.5)	F2J220241030	Nickel
	U-108 (18-18.5)	F2J220241024	TAL Metals
	U-112 (5.5)	F2J220241032	Nickel
	U-21 (17-17.5)	F2J220241003	TAL Metals
	U-75E (11-11.5)	F2J220241026	TAL Metals
	U-92 (16.5-17)	F2J220241002	Nickel
	U-93 (17-17.5)	F2J220241011	Nickel
	U-95 (17-17.5)	F2J220241021	TAL Metals
	U-98 (2.0-2.5)	F2J220241027	Nickel
F2J250192	U-106(7-7.5)	F2J250192020	Nickel
	U-109(6.5-7)	F2J250192019	Nickel
	U-110(11)	F2J250192022	Nickel

Table 1-1: Sample Cross-Reference List

Package Identification	Field ID	Laboratory ID	Analysis Requested
	U-111(11.5)	F2J250192024	Nickel
	U-111DUP(11.5)	F2J250192026	Nickel
	U-113(7.5)	F2J250192017	Nickel
	U-115(17)	F2J250192025	Nickel
	U-121(19)	F2J250192023	Nickel
	U-94(9)	F2J250192021	Nickel
	U-97(8.5)	F2J250192018	Nickel
F2J300159	U-43(18.5-19)	F2J300159013	Nickel
	U-44(17-17.5)	F2J300159010	Nickel
	U-54(19-19.5)	F2J300159014	Nickel
	U-54(5-5.5)	F2J300159015	Nickel
F2K010208	U-55 (17.5-18.5)	F2K010208006	Nickel
	U-55 (7.5-8)	F2K010208007	Nickel

TAL – Target Analyte List of metals; the list is found in the guidance from the Contract Laboratory Program (USEPA, 1992).

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report summarizes the findings of the review and outlines any deviations from the applicable QC criteria outlined in the following documents:

- GTE Operations Support Incorporated 2002. *Soil Remediation Program Work Plan, (QAPP–Appendix H)*, Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1, Revision 2, October 2002;

- O'Brien & Gere Engineers, Inc. 2000. *Supplement to the Approved Work Plan (QAPP – Appendix C), Former Sylvania Electric Products Incorporated Facility, Cantiague Rock Road, Hicksville, New York.* Syracuse, New York;

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;

- *United States Environmental Protection Agency Region II Evaluation of Metals Data for the CLP 3/90*, USEPA 1992;

- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000); and

- *CLP National Functional Guidelines for Inorganic Data Review*, EPA 540-R-01-008, July 2002.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for metals analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW846 Method 3050B - Microwave Acid Digestion.

- SW846 Method 6010B - Inductively Coupled Plasma (ICP) Spectrometry by "Trace" Instrumentation for the Target Analyte List (TAL) Metals, and nickel where applicable. (*Total cyanide, which is classified as a TAL metal in ASP 2000, was not required to be analyzed.)*

- SW846 Method 7471A – Cold Vapor Atomic Absorption (CVAA) Spectroscopy for mercury.

The laboratory assigned a sample delivery group (SDG) number to a group of samples during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and controls QC analyses. A total of ten SDGs composed the soils samples. The SDG number, field identification and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. A summary of the findings associated with the validation and the specific QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Data completeness and usability are discussed in Section 4. Section 5 presents the Data Usability Summary Report (DUSR) Summary Information. A copy of the validated data is presented in Tables 8 and 9 of this Soils Report.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (GTEOSI 2002), the analytical methodology, and the data validation guidelines referenced in Section 1.

URS performed a data review of all analytical results to assess data quality. A data review includes an assessment of sample handling protocols, supporting laboratory quality control (QC) parameters, and field QC. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements;
- Analytical methods performed and test method references;
- Sample condition - review of log-in records for cooler temperature, presence of headspace, chemical preservation, etc.;
- Holding times (comparison of collection, preparation, and analysis dates);
- Analytical results (units, values, significant figures, reporting limits, analyst, percent moisture);
- Sample traceability and comparison to raw data;
- Initial calibration – comparison to laboratory criteria;
- Continuing calibration – comparison to laboratory criteria;
- Method blank results and laboratory contamination;
- Laboratory control sample (LCS) results and comparison to laboratory control limits;
- Matrix spike/matrix spike duplicate (MS/MSD) results and comparison to laboratory control limits;
- Interference Check Samples (ICS)/Contract Required Detection Limits (CRDL);
- Field duplicate results and comparison to data review criteria;
- Field QC sample (e.g., equipment blanks);
- Analyte quantitation, reporting limits and dilutions; and
- Electronic Data Deliverables (EDDs) – comparison to the hardcopy analytical report (a 20% check of the data to confirm that the results in the hardcopy report matched the results in the electronic file).

The analytical reports were reviewed for completeness and the accompanying QC data were reviewed for acceptable performance. In case documentation was incomplete, the laboratory was required to provide the missing information. When QC results indicated poor performance, URS applied data qualifiers to the results to inform the data user of the possible performance problem. These qualifiers are in addition to or a revision of the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Validation Qualifiers

The following qualifiers have been used by the laboratory for the metals analyses:

"U" Non-detect result at the established laboratory reporting limit (adjusted for percent moisture, if applicable).

"B" Indicates an estimated value or a value below the established reporting limit but above the method detection limit. Note: All "B" qualifiers for the metals analyses were generally revised to "J" to provide consistency between the organics and inorganics databases.

"N"Indicates a result associated with an MS/MSD percent recovery that exceeds laboratory control limits.

"*" Indicates a result associated with an MS/MSD relative percent difference (RPD) that exceeds laboratory control limits.

Laboratory qualifiers defined above remain in the original electronic database. For the final database summary (Tables 8 and 9 of this Soils Report), the qualifiers have been revised or removed during the data validation process to simplify the presentation of the usability of the data. The revised qualifiers may be one of the following:

"U"The chemical was not detected. Value shown is the reporting limit.

"J" Estimated concentration because the result was below the sample reporting limit or quality control criteria were not met.

"UJ" The chemical was not detected at or above the sample reporting limit. However, the reporting limit is approximate and may or may not represent the actual limit of reporting necessary to accurately and precisely measure the chemical in the sample.

The laboratory qualifiers were revised by URS during the data review process to simplify the presentation of data in the final report per the USEPA Region 2 Guidance (USEPA, 1992). Generally, all codes used by the laboratory to indicate results associated with quality control/performance problems were replaced in the electronic database with a "J" qualifier. The "J" qualifier indicates estimated data.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data: blanks, calibration standards, calibration verifications, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes the findings from the review of the QA/QC parameters specified in Section 2.1. validation criteria, and which QA/QC parameters did not meet validation criteria. A summary of the individual components of the review are described in the following sections.

3.2. Review of Validation Criteria

3.2.1. Completeness Review

The laboratory provided the analytical report in the New York State Department of Environmental Conservation (NYSDEC) format. All necessary documents were included in the report package including a case narrative summarizing the QC issues associated with the project analyses.

3.2.2. Test Methods

The laboratory performed the analyses for the project samples using the analytical test methods listed in Section 1.3. These included SW846 Method 3050B (microwave acid digestion of solid samples) followed by Method 6010B (ICP "Trace") analysis. For mercury analyses, the laboratory used SW846 Method 7471A (CVAA). In general, one minor deviation was observed in the analysis of samples using SW846 Method 6010B. This deviation is described in Section 3.2.7.

3.2.3. Sample Receipt

The laboratory received 68 solid samples for metals analysis between October 13, 2002 and December 11, 2002. The sample temperatures at the time of receipt were within the recommended temperature range of 4°C±2°C for all SDGs. Field and laboratory personnel completed the COC correctly recording the signature, date, and time of custody transfer.

The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This Form identifies whether the containers were received undamaged, within the proper temperature range, in a cooler that is sealed with a custody seal, and with a completed COC enclosed to identify all samples submitted to the laboratory. For all SDGs, this form was completed properly.

3.2.4. Holding Times

The laboratory performed all metals analyses within EPA-recommended holding time of 180-days for solid samples.

3.2.5. Analytical Results

For each sample tested, the laboratory provided the analytical test information using a laboratory standard format which shows critical information pertaining to the analyses performed. The information provided includes the following: the laboratory name; the project name; the laboratory sample ID; matrix; date sampled; date received; preparation batch ID; the result; the reporting limit; the method detection limit (MDL); the units of measure; the laboratory method; dilution factor; analysis time; preparation date; analysis date; work order number, and laboratory qualifiers (if any). The laboratory provided all the appropriate forms for the requested methods.

3.2.6. Traceability to Raw Data

Traceability of the metals analyses is established by the digestion logs. These forms list the project samples analyzed per laboratory batch processed and the corresponding QC samples (e.g., preparation blank and laboratory control sample) performed with the project samples. All project samples for all SDGs were included on the applicable forms.

3.2.7. Initial Calibration

The laboratory prepared an initial calibration (ICAL) curve for each element in accordance with method criteria. Initial calibration verifications (ICVs) were analyzed immediately after each ICAL, with recoveries within ±10% of the true values for all elements. The laboratory indicated that for three SDGs (F2J140174, F2J140175, F2J220241), the sequence of analysis for the initial calibration verification (ICV) standard was not performed in accordance with requirements of the laboratory standard operating procedure and USEPA guidance documents. The ICV must be performed before the CRDL and the ICS analyses. The laboratory performed the ICV after these QC sample analyses. The laboratory indicated that the ICV volume was low and an adequate volume of QC sample was not available for the analysis. When the error was identified, the ICV was reloaded onto the system and analyzed immediately after the CRDL and ICS standards. The second run of the ICV had recoveries within laboratory control limits. The data associated with this calibration are considered acceptable, since recoveries of all applicable QC samples analyzed in the batch were within laboratory acceptance limits.

3.2.8. Continuing Calibration Verification

The continuing calibration verification (CCV) standards were analyzed after the ICALs and after every 10 project samples as required by the reference test method. The percent recoveries were within ± 10% of the true values for all elements.

3.2.9. Initial and Continuing Calibration Blanks

The initial calibration blank (ICB) and continuing calibration blanks (CCB) were analyzed after the ICVs and after every 10 project samples as required by the reference test method with the exception of the three SDGs listed in Section 3.2.7. The ICB was also not analyzed in the proper sequence after the calibration, but rather was run after the CRDL and ICS samples. Again, for reasons explained in Section 3.2.7, the data associated with these SDGs are considered usable because corresponding QC sample analyses are within laboratory control limits.

Also, all initial and continuing calibration blank results were less than the laboratory reporting limit, but in a few cases were greater than the laboratory MDL (or were negative, between the negative reporting limit and the negative MDL). No action was required when the laboratory contamination is detected in this range for soil analyses.

3.2.10. Laboratory Method Blanks (Preparation Blanks)

Most preparation blanks (i.e., digestion blanks) did not contain contamination from laboratory systems. Only in a few cases were the elements of concern, in particular, aluminum, iron, lead, and manganese identified in the preparation blanks. In no case, was the element nickel found in the preparation blanks. Because all project sample results were greater than five times the corresponding contaminant level, no data were revised due to method blank contamination. In should be noted, that in a few cases, the laboratory reported a negative method blank value for the elements arsenic and thallium. The negative result could indicate a bias for both positive and non-detect results. However, no qualification of data is required when the negative value (between the negative MDL and negative reporting limit) is identified similar to action taken for positive blank results.

3.2.11. Laboratory Control Sample Results

The laboratory analyzed a laboratory control sample (LCS) for all QC batches. The percent recoveries were within laboratory control limits for all QC batches.

3.2.12. Matrix Spike/Matrix Spike Duplicate Analyses

Multiple project samples were submitted for MS/MSD analyses. The percent recoveries and the relative percent differences (RPDs) of several elements exceeded laboratory control limits. When the percent recoveries exceeded laboratory limits, the laboratory qualified all the associated data in the batch with an "N" qualifier. When the RPD exceeded laboratory limits, the laboratory qualified all the associated data in the batch with an "*" (asterisk). It should be noted that for 2 elements (aluminum and iron), the sample concentrations were greater than four times (4x) the laboratory spike concentrations. No qualification of data is required when the spike ratio is greater than four times. The following table shows a summary of the actions taken with regard to MS/MSD results:

Table 3-1. *Evaluation of Matrix Spike/Matrix Spike Duplicate Results*

Package Identification	*Field ID*	*Qualified Compounds*	*Action*
F2J180170	U-37(16-16.5)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-46(19-19.5)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
F2J140174	U-15 (14-16)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-16A (15.5)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-20 (19.5)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-22 (7.5)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-31 (11.5)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-35B (12)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-38 (19-0)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
F2J140175	U-1 (5)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-32 (11.5-12)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-33 (12)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-48C (5.5-6)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
F2J140191	PMC-3	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
	U-36 (2-4)	Al, Fe, Mn	Remove the "N" qualifier for Al and Fe. Revise the "N" qualifier to "J" for Mn.
F2J220241	U-108 (18-18.5)	Al, Fe, Mn	Remove the "N" and "*" qualifiers for Al and Fe. Revise the "N" and "*" qualifiers to "J" for Mn.

Table 3-1. *Evaluation of Matrix Spike/Matrix Spike Duplicate Results*			
Package Identification	***Field ID***	***Qualified Compounds***	***Action***
	U-21 (17-17.5)	Al, Fe, Mn	Remove the "N" and "*" qualifiers for Al and Fe. Revise the "N" and "*" qualifiers to "J" for Mn.
	U-75E (11-11.5)	Al, Fe, Mn	Remove the "N" and "*" qualifiers for Al and Fe. Revise the "N" and "*" qualifiers to "J" for Mn.
	U-95 (17-17.5)	Al, Fe, Mn	Remove the "N" and "*" qualifiers for Al and Fe. Revise the "N" and "*" qualifiers to "J" for Mn.

3.2.12. Interference Check Sample/Contract Required Detection Limit Analysis

The laboratory performed the interference check sample analyses for each SDG. The percent recoveries for all SDGs were within method criteria for all analyses. The laboratory also performed a CRDL analysis for most SDGs. In several cases, the percent recoveries for mercury were outside the 80-120% acceptance range. For these cases, the mercury results were qualified as estimated (J or UJ). The following table shows a summary of the actions taken with regard to CRDL results:

Table 3-2. *Evaluation of CRDL Results:*			
Package Identification	***Field ID***	***Qualified Compounds***	***Action***
F2J140174	U-15 (14-16)	Hg	Qualify mercury as "UJ"
	U-16A (15.5)	Hg	Qualify mercury as "J"
	U-20 (19.5)	Hg	Qualify mercury as "UJ"
	U-22 (7.5)	Hg	Qualify mercury as "UJ"
	U-31 (11.5)	Hg	Qualify mercury as "J"
	U-35B (12)	Hg	Qualify mercury as ""UJ"
	U-38 (19-0)	Hg	Qualify mercury as "UJ"
F2J140191	PMC-3	Hg	Qualify mercury as "UJ"
	U-36 (2-4)	Hg	Qualify mercury as "J"
F2J140175	U-1 (5)	Hg	Qualify mercury as "J"
	U-32 (11.5-12)	Hg	Qualify mercury as "UJ"
	U-33 (12)	Hg	Qualify mercury as "UJ"
	U-48C (5.5-6)	Hg	Qualify mercury as "J"

3.2.13. Field Duplicate Analyses

Three project samples were submitted as field duplicates. An evaluation of the precision of the field sampling procedure, as well as the laboratory analysis procedure, was made based on the relative percent difference (RPD) calculated for the original and duplicate sample results. Calculations were made only when both results were above the laboratory reporting limits. The RPD values for most elements were less than 100% (QAPP validation criteria for soils).

Table 3-3. *Evaluation of Field Duplicate Samples*			
Package Identification	***Field ID***	***Qualified Compounds***	***Action***
F2J14091	PMC-3 *Field Duplicate of U-36 (2-4)*	Nickel	"J" both results

It should be noted that the QAPP (GTEOSI 2002) requires the collection of field duplicates at a rate of 5% (one field duplicate for every twenty project samples). This frequency was not met. The total number of project samples was 68 which would require that four field duplicates be submitted. The inclusion of the MS/MSD samples can be used to fulfill the duplicate requirement, therefore no qualification of data is required due to this variation from the QAPP.

3.2.14. Equipment Blanks

No equipment blank was submitted for the soils sampling project. One equipment blank was required to be collected for the sampling event per Section H.3.1.3 of the approved QAPP (GTEOSI 2002). No qualification of data is required due to the lack of equipment blank sample results.

3.2.15. Quantitation of Results

The laboratory reporting limit for nickel was in accordance with the required Practical Quantitation Limits specified in the QAPP (GTEOSI 2002). No PQLs were provided for the TAL metals. The laboratory reported estimated data below the laboratory reporting limit but above the laboratory MDL, and qualified the estimated data with a "B" qualifier. In the EDD, URS revised the "B" qualifier to a "J" qualifier to provide consistency in review of the database. No summary of the results that were revised was created since this is a standard practice for electronic data handling.

3.2.16. Electronic Data Deliverables

The results in electronic database matched results listed on the hardcopy analytical report including laboratory qualifiers. The qualifiers and results were revised based on quality control issues, and changes are listed in previous comments made in this DUSR.

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the metals data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to data validation QA/QC exceedances should be considered conditionally usable.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTE OSI 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PSARCC) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. For the metals analyses, none of the data were rejected due to precision non-conformances.

LCS recoveries indicate the accuracy of the data. For the metals analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte quantification are indicators of the representativeness of the analytical data. None of the metals data were rejected due to representativeness non-conformances.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of elements that can be determined with a designated level of confidence. None of the metals data were rejected due to sensitivity non-conformance.

ADDITIONAL SOIL BORINGS
APRIL 2003

FORMER SYLVANIA ELECTRIC PRODUCTS INCORPORATED FACILITY

HICKSVILLE, NEW YORK

SITE NUMBER V-00089-1

GTE OPERATIONS SUPPORT INCORPORATED

For:

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July 29, 2003

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1.0 ADDITIONAL SOIL BORINGS

This section describes the field methods used including:

- Boring installations;
- Sample screening, collection, and disposition; and
- Worker exposure monitoring.

Figures are provided at the end of the text. Figure 1 shows the Site location. Figure 2 depicts the soil boring locations conducted during the current and previous Site investigations.

1.1 SITE CHARACTERIZATION

1.1.1 Boring Installation

The additional soil boring investigation was conducted from April 10 through 12, 2003. The objective of the sampling was to provide data to aid in the characterization of potential mixed waste areas and in response to NYSDEC's April 8, 2003 letter. The soil cores were obtained using a direct push methodology using 4-foot acetate sleeves. With the exception of some discrete samples collected at specific locations, the soil cores started from the ground surface and proceeded to a target depth dictated by previous analytical results, the levels of radioactivity, and the headspace volatile organic compounds (VOC) readings. The boring depths ranged from 8 to 18 feet below ground surface (bgs), with the majority of the boring depths being 12 feet bgs. A table showing the boring depths is included as Table 1. Soil boring logs are in Appendix A.

A geologist has described the soils from which the additional soils borings were taken according to the Unified Soil Classification System. Soil descriptions include: soil type, color, recovery, moisture content, and odor (if any). Sample recoveries varied and ranged from 0 to 100 percent due to subsurface conditions. Field screening was performed to evaluate and select the soil interval(s) from the soil core to be sent to the laboratory. A representative portion of each sample was retained for analysis and labeled with: Site name, boring number, sample interval, date, and time of collection. If more than one discrete subsurface zone within a soil boring was of interest, either by visual observation or by field screening, additional soil samples were collected and analyzed for VOCs, nickel, radionuclides, and percent solids. Select samples were also analyzed for Toxicity Characteristic Leaching Procedures (TCLP) VOCs and nickel. Specific procedures and methodologies were presented in the Field Sampling and Analysis Plan (FSAP), Appendix B to the *Soil Boring Work Plan, May 3, 2002 (Revision 1: September 2002)* (URS 2002).

1.1.2 Screening Techniques

Radiation survey instruments were used to: screen soil samples for radioactivity, monitor breathing air zone for internal exposure, and scan personnel, equipment, materials and waste materials for release. The steel drilling casing was scanned with a Ludlum Model 19 for gamma radiation as it was removed from the hole. Additionally, the 0.016" acetate liners, which were used inside the steel casings, were scanned for the presence of beta radiation prior to opening and for VOCs prior to logging the soil core. The acetate liners were scanned with a 2" x 2" Sodium Iodide (NaI) Detector, a GM Pancake Probe, and photoionization detector (PID).

1.1.3 Community Air Monitoring Program

As part of the Site's Community Air Monitoring Program (CAMP), real-time air monitoring for organic vapors and particulate levels at the perimeter of the work area was conducted during the installation of the soil borings. Monitoring equipment included the use of a Mini Rae 2000™, MIE Mini Ram dust monitor, and a vacuum pump with a Mixed Cellulose Ester (MCE) filter. The VOCs and particulate concentrations were monitored at the upwind and downwind perimeter of the work area continuously (accumulated over 15-minute intervals).

The DataRAM at Station 002 (southeast of Building 100) had fluctuations in the readings throughout the monitoring period however; no reportable occurrences were noted over the 15-minute monitoring intervals. No radiological readings were above minimum detectable activity (MDA). No PID readings were above the action levels.

1.1.4 Exposure Monitoring

Air monitoring was conducted in the work zones to ensure that Site workers were not exposed to chemicals or radioactivity during fieldwork. Monitoring was conducted using a PID, Ludlum Model 19, and sampling pumps and filter cassettes. No sustained ambient air concentrations of total VOCs were noted. No airborne particulates or elevated (above ambient background) radiological field readings were detected.

Personnel radiation monitoring was conducted using individual optically stimulated luminescent dosimeters (OSLDs) and bioassay testing. The OSLD and bioassay results demonstrate that the Site workers received no measurable radiation exposure.

1.2 DATA ANALYSIS

Samples were collected from April 10 through 12, 2003 and submitted for analysis to Stone Environmental Laboratory (on-Site laboratory) for VOC analysis with 10 percent going off-Site for confirmation to STL Laboratories, Inc., (STL) of Earth City, Missouri. All radiological samples were analyzed by STL using gamma spectroscopy (Mod 300). Some samples were also analyzed by alpha spectroscopy for isotopic thorium (3004/RP-725) and isotopic uranium (3050/RP-725).

Data validation and usability assessment

The analytical data generated for this investigation were evaluated by URS using the quality assurance/quality control (QA/QC) criteria and guidance methods established in the project quality assurance project plan (QAPP), Appendix C of the *Soil Boring Work Plan, May 3, 2002 (Revision 1: September 2002)* (URS 2002).

Five qualifiers were used during the data validation process "R", "U", "J", "UJ", and "BU". The use of these qualifiers is consistent with guidance presented in *USEPA Risk Assessment Guidance for Superfund* (USEPA 1992a). Nonconformance from the QA/QC criteria were presented in the attached Data Usability Summary Reports (DUSRs) (Appendix B). Overall, 100 percent of the data (both radiological and chemical) were determined to be usable for qualitative and quantitative purposes. Therefore, the completeness objective of 90 percent as stated in the QAPP was met.

2.0 ANALYTICAL RESULTS

Soil characterization within the study area consisted of the advancement of soil borings, soil screening and the collection of soil samples. The boring depths were based on Site-specific areas of interest and field conditions encountered.

Prior to opening and logging the core, field screening was used to evaluate the presence of beta or gamma radiation. Following opening, the cores were screened for VOCs. Screening for VOCs is indicated on the boring logs (Appendix A). Field screening was used to aid in the selection of samples to be submitted for laboratory analysis. Soil core radiation field screening logs are included as Tables 2 and 3.

Samples of the soil cores were sent to the laboratory for analysis including radionuclides, VOCs, and nickel. Table 4, Sample Identification and Analytical Summary, provides the boring locations and analyses run on a per sample basis. Radionuclide analytical results for gamma and alpha spectroscopy are provided in Tables 5 and 6, respectively. Chemical (VOCs and nickel) analytical results for the soil borings are presented as Tables 7 through 9.

2.1 RADIOLOGICAL CHARACTERIZATION

Selected samples were analyzed by STL for gamma and alpha spectroscopy (Tables 5 and 6, respectively). Concentrations of certain thorium and uranium greater than proposed cleanup levels were detected in some shallow soil samples. Site cleanup levels are 50 pCi/g for U-238 and 2.8 pCi/g Th-232 above background.

Of the 34 gamma spectroscopy samples analyzed, there were 9 samples containing uranium-238 (inferred from protactinium-234m) and 5 samples containing thorium-232 (inferred from actinium-228) above cleanup levels. The concentrations of U-238 ranged from not detected to 459 pCi/g (U-170 10.5-11.5 feet). Figure 4 shows the boring locations, sample interval(s) and concentration of uranium and thorium. Alpha spectroscopy was used to further examine select samples (Table 6).

2.2 CHEMICAL AND NICKEL CHARACTERIZATION

Selected samples were analyzed for VOCs and nickel (Tables 7, 8, and 9, respectively, and Figures 3 and 3b). Of the 32 samples analyzed, there were 4 samples containing PCE and no samples containing TCE above cleanup levels. Site cleanup levels are 1.82 ppm for PCE and 0.7 ppm for TCE. The concentrations of PCE ranged from not detected to 440 mg/Kg (U-168 16.5-17 feet).

Two samples were collected for disposal characterization purposes in areas with previous elevated detections of nickel. Total nickel concentrations ranged from 55.1 mg/kg in U-169 (14.5-15 feet) to 28,000 mg/kg in U-170 (11-11.5 feet).

3.0 REFERENCES

GTE Operations Support Incorporated. 1999. Voluntary Cleanup Agreement WI-0844-98-08, dated April 7, 1999 in cooperation with the New York State Department of Environmental Conservation for Site Number V 00089-1.

GTE Operations Support Incorporated. *Soil Remediation Program Work Plan, October 2002:Revision 2* (QAPP – Appendix H), October 2002;

URS Corporation. 2002. *Soil Boring Work Plan, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York. May 3, 2002 (Revision 1: September 2002)* for GTE Operations Support Incorporated.

TABLES

Table 1
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Soil Boring Depths

Sample ID	Depth	Sample ID	Depth	Sample ID	Depth	Sample ID	Depth
U-148	12	U-155	12	U-162	16	U-169	12 - 16
U-149	12	U-156	12	U-163	12	U-170	8 - 12
U-150	12	U-157	12	U-164	12	U-171	12
U-151	12	U-158	12	U-165	8	U-172	12
U-152	12	U-159	12	U-166	8	U-173	12
U-153	12	U-160	12	U-167	8	U-174	12
U-154	12	U-161	12	U-168	14 - 18		

Notes:
All depths are in feet

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Soil Core Alpha / Beta Field Screening

	Sample ID	U-148	U-149	U-150	U-151	U-152	U-153	U-154	U-155	U-156	U-157	U-158	U-159	U-160	U-161	U-162
	Sample Date	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/11/03	4/11/03	4/11/03
Depth (ft.)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0 - 0.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5 - 1.0		--	--	--	47	43	--	--	--	--	--	--	36	44	--	--
1.0 - 1.5		27	45	--	51	83	34	85	43	37	--	43	53	43	24	3
1.5 - 2.0		28	52	46	25	31	68	180	56	39	--	50	34	60	72	65
2.0 - 2.5		38	45	54	47	50	215	46	35	60	37	43	24	39	59	158
2.5 - 3.0		57	33	81	30	50	50	44	50	55	35	94	38	75	44	105
3.0 - 3.5		34	36	52	28	33	44	26	37	39	42	47	37	49	74	163
3.5 - 4.0		41	33	36	52	30	33	38	30	51	44	43	25	41	57	64
4.0 - 4.5		46	37	59	47	50	53	--	47	31	33	52	34	--	--	93
4.5 - 5.0		38	40	40	25	37	57	23	35	49	33	33	37	49	49	59
5.0 - 5.5		48	57	40	34	49	43	49	26	30	47	34	39	46	41	39
5.5 - 6.0		45	44	48	36	29	44	41	35	41	29	31	31	51	38	48
6.0 - 6.5		36	61	44	35	31	48	40	45	30	50	36	19	30	49	35
6.5 - 7.0		33	72	39	44	27	43	43	39	36	39	40	52	48	41	52
7.0 - 7.5		50	76	66	44	57	36	36	28	41	33	44	40	32	43	51
7.5 - 8.0		44	89	49	47	30	39	41	43	55	21	38	49	37	36	33
8.0 - 8.5		40	61	57	40	56	34	31	26	54	40	46	29	27	41	37
8.5 - 9.0		41	57	47	34	34	29	44	33	35	34	36	42	34	31	43
9.0 - 9.5		45	59	40	29	42	36	43	41	42	51	56	29	67	57	43
9.5 - 10.0		45	74	43	36	43	30	52	38	40	33	38	48	46	53	58
10.0 - 10.5		46	48	35	41	31	32	24	40	33	42	50	36	54	61	44
10.5 - 11.0		42	49	34	33	51	41	32	36	41	36	35	35	31	43	30
11.0 - 11.5		50	67	40	37	58	32	36	28	35	34	42	37	57	43	28
11.5 - 12.0		33	40	38	38	39	39	43	61	47	41	39	--	38	37	44
12.0 - 12.5		--	--	--	--	--	--	--	--	--	--	48	--	--	--	37
12.5 - 13.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	43
13.0 - 13.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	51
13.5 - 14.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	49
14.0 - 14.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	48
14.5 - 15.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	42
15.0 - 15.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	48
15.5 - 16.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	35
16.0 - 16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16.5 - 17.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.0 - 17.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5 - 18.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18.0 - 18.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18.5 - 19.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19.0 - 19.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19.5 - 20.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Soil Core Alpha / Beta Field Screening

			Sample ID	U-163	U-164	U-165	U-166	U-167	U-168	U-169	U-170	U-171	U-172	U-173	U-174
			Sample Date	4/11/03	4/11/03	4/11/03	4/11/03	4/12/03	4/12/03	4/12/03	4/12/03	4/12/03	4/12/03	4/12/03	4/12/03
Depth (ft.)			Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0	-	0.5		--	--	--	--	--	--	--	--	--	--	--	--
0.5	-	1.0		--	29	--	--	--	--	--	--	26	43	37	--
1.0	-	1.5		35	42	--	42	--	--	--	--	39	40	43	--
1.5	-	2.0		53	40	--	42	22	--	--	--	48	33	40	42
2.0	-	2.5		61	42	32	41	42	--	--	--	50	44	47	41
2.5	-	3.0		70	39	50	61	58	--	--	--	33	36	34	47
3.0	-	3.5		53	50	41	48	52	--	--	--	34	46	46	31
3.5	-	4.0		51	48	43	45	44	--	--	--	44	45	36	--
4.0	-	4.5		49	41	--	45	--	--	--	--	41	44	40	--
4.5	-	5.0		43	31	--	38	56	--	--	--	36	43	40	40
5.0	-	5.5		45	45	--	27	51	--	--	--	36	49	48	50
5.5	-	6.0		34	34	--	37	38	--	--	--	32	27	32	45
6.0	-	6.5		36	43	--	38	37	--	--	--	41	35	36	36
6.5	-	7.0		45	37	60	34	40	--	--	--	36	44	33	36
7.0	-	7.5		28	43	49	42	38	--	--	--	47	39	36	39
7.5	-	8.0		37	41	59	29	35	--	--	--	33	39	39	39
8.0	-	8.5		40	31	--	--	--	--	--	--	58	--	41	--
8.5	-	9.0		38	29	--	--	--	--	--	--	40	39	46	44
9.0	-	9.5		47	48	--	--	--	--	--	--	42	39	45	38
9.5	-	10.0		44	36	--	--	--	--	--	--	51	40	47	34
10.0	-	10.5		47	16	--	--	--	--	--	100	42	38	21	31
10.5	-	11.0		59	39	--	--	--	--	--	517	37	30	42	37
11.0	-	11.5		48	--	--	--	--	--	--	273	40	32	53	34
11.5	-	12.0		29	--	--	--	--	--	--	217	33	39	43	28
12.0	-	12.5		--	--	--	--	--	--	--	--	--	--	--	--
12.5	-	13.0		--	--	--	--	--	--	48	--	--	--	--	--
13.0	-	13.5		--	--	--	--	--	--	45	--	--	--	--	--
13.5	-	14.0		--	--	--	--	--	--	41	--	--	--	--	--
14.0	-	14.5		--	--	--	--	--	--	52	--	--	--	--	--
14.5	-	15.0		--	--	--	--	--	--	36	--	--	--	--	--
15.0	-	15.5		--	--	--	--	--	--	33	--	--	--	--	--
15.5	-	16.0		--	--	--	--	--	53	43	--	--	--	--	--
16.0	-	16.5		--	--	--	--	--	46	--	--	--	--	--	--
16.5	-	17.0		--	--	--	--	--	48	--	--	--	--	--	--
17.0	-	17.5		--	--	--	--	--	36	--	--	--	--	--	--
17.5	-	18.0		--	--	--	--	--	43	--	--	--	--	--	--
18.0	-	18.5		--	--	--	--	--	--	--	--	--	--	--	--
18.5	-	19.0		--	--	--	--	--	--	--	--	--	--	--	--
19.0	-	19.5		--	--	--	--	--	--	--	--	--	--	--	--
19.5	-	20.0		--	--	--	--	--	--	--	--	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Soil Core Gamma Field Screening

			Sample ID	U-148	U-149	U-150	U-151	U-152	U-153	U-154	U-155	U-156	U-157	U-158	U-159	U-160	U-161	U-162
			Sample Date	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/10/03	4/11/03	4/11/03	4/11/03
Depth (ft.)			Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0	-	0.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
0.5	-	1.0		--	--	--	4536	4643	--	--	--	--	--	--	4291	4527	--	--
1.0	-	1.5		4469	4548	--	4459	4756	4607	5050	4612	4321	--	4407	4428	4897	4598	4773
1.5	-	2.0		4370	4942	4457	4562	4571	5568	5489	4591	4315	--	4574	4404	5459	5015	5055
2.0	-	2.5		4382	4364	4874	4373	4555	6054	4607	4579	4596	4461	4910	4457	5120	4810	5612
2.5	-	3.0		4483	4249	5095	4278	4638	5019	4416	4617	4345	4325	5073	4445	5233	4553	5988
3.0	-	3.5		4326	4460	4779	4525	4550	4751	4485	4553	4345	4500	4668	4370	4801	4745	5747
3.5	-	4.0		4308	4502	4569	4238	4310	4398	4322	4643	4538	4442	4642	4362	4652	4650	5170
4.0	-	4.5		4358	4612	4708	4464	4400	4417	--	4394	4393	4509	4641	4316	--	--	5320
4.5	-	5.0		4345	4482	4580	4637	4420	4869	4365	4314	4333	4350	4579	4298	4836	4566	4670
5.0	-	5.5		4500	4495	4453	4582	4439	4608	4270	4378	4307	4381	4314	4221	4846	4565	4560
5.5	-	6.0		4439	4712	4559	4585	4443	4360	4556	4339	4486	3871	4384	4438	4526	4521	4849
6.0	-	6.5		4413	4593	4542	4446	4540	4504	4382	4294	4544	4426	4336	4447	4420	4629	4590
6.5	-	7.0		4299	4771	4515	4529	4331	4283	4504	4349	4399	4339	4555	4430	4611	4572	4516
7.0	-	7.5		4252	5235	4622	4426	4370	4451	4281	4546	4313	4445	4449	4321	4619	4554	4554
7.5	-	8.0		4566	5374	4530	4361	4183	4757	4291	4416	4421	4550	4429	4298	4557	4445	4834
8.0	-	8.5		4350	4516	4278	4468	4513	4267	4459	4333	4326	4358	4399	4329	4684	4571	4643
8.5	-	9.0		4323	4574	4322	4190	4318	4377	4266	4308	4363	4232	4504	4562	4732	4663	4848
9.0	-	9.5		4315	4524	4531	4563	4341	4407	4425	4409	4560	4335	4865	4515	4751	4860	4910
9.5	-	10.0		4403	4923	4197	4403	4497	4252	4205	4500	4304	4354	4381	4407	4566	4876	4592
10.0	-	10.5		4169	4590	4305	4284	4367	4485	4420	4547	4431	4450	4423	4295	4503	4785	4608
10.5	-	11.0		4410	4900	3339	4399	4407	4350	4207	4543	4341	4358	4332	4339	4632	4668	4675
11.0	-	11.5		4291	4642	4527	4288	4535	4426	4296	4437	4277	4222	4390	4408	4752	4484	4531
11.5	-	12.0		4200	4574	4413	4500	4354	4184	4229	4594	4369	4296	4397	--	4612	4681	4611
12.0	-	12.5		--	--	--	--	--	--	--	--	--	--	4523	--	--	--	4765
12.5	-	13.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	5086
13.0	-	13.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4656
13.5	-	14.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4719
14.0	-	14.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4565
14.5	-	15.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4650
15.0	-	15.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4760
15.5	-	16.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4535
16.0	-	16.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16.5	-	17.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.0	-	17.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17.5	-	18.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18.0	-	18.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18.5	-	19.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19.0	-	19.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19.5	-	20.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 3
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Soil Core Gamma Field Screening

	Sample ID	U-163	U-164	U-165	U-166	U-167	U-168	U-169	U-170	U-171	U-172	U-173	U-174
	Sample Date	4/11/03	4/11/03	4/11/03	4/11/03	4/12/03	4/12/03	4/12/03	4/12/03	4/12/03	4/12/03	4/12/03	4/12/03
Depth (ft.)	Units	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min	c/min
0 - 0.5		--	--	--	--	--	--	--	--	--	--	--	--
0.5 - 1.0		--	4517	--	--	--	--	--	--	4410	4294	4459	--
1.0 - 1.5		4433	4622	--	4409	--	--	--	--	4460	4452	4325	--
1.5 - 2.0		4625	4515	--	4648	4650	--	--	--	4398	4434	4455	4473
2.0 - 2.5		4998	4340	4544	4669	5083	--	--	--	4389	4489	4485	4649
2.5 - 3.0		5072	4365	4686	4531	4832	--	--	--	4573	4542	4297	4518
3.0 - 3.5		4852	4759	4676	4674	4642	--	--	--	4389	4543	4487	4321
3.5 - 4.0		4580	4886	4486	4576	4526	--	--	--	4323	4372	4759	--
4.0 - 4.5		4721	4417	--	4586	--	--	--	--	4288	4483	4509	--
4.5 - 5.0		4722	4450	--	4428	4624	--	--	--	4346	4355	4652	4344
5.0 - 5.5		4715	4550	--	4374	4538	--	--	--	4391	4338	4620	4252
5.5 - 6.0		4705	4543	--	4314	4478	--	--	--	4333	4318	4200	4388
6.0 - 6.5		4592	4430	--	4380	4510	--	--	--	4232	4329	4322	4218
6.5 - 7.0		4666	4695	4569	4331	4395	--	--	--	4369	4504	4603	4401
7.0 - 7.5		4677	4564	4569	4396	4460	--	--	--	4302	4334	4452	4231
7.5 - 8.0		4592	4525	4410	4413	4569	--	--	--	4584	4495	4473	4512
8.0 - 8.5		4705	4418	--	--	--	--	--	--	4341	--	4361	--
8.5 - 9.0		4556	4591	--	--	--	--	--	--	4227	4446	4577	4270
9.0 - 9.5		4444	4663	--	--	--	--	--	--	4636	4524	4502	4647
9.5 - 10.0		4540	4568	--	--	--	--	--	--	4389	4482	4243	4493
10.0 - 10.5		4533	4277	--	--	--	--	--	5562	4336	4297	4514	4498
10.5 - 11.0		4411	4435	--	--	--	--	--	7992	4429	4458	4530	4264
11.0 - 11.5		4581	--	--	--	--	--	--	7117	4420	4364	4445	4295
11.5 - 12.0		4428	--	--	--	--	--	--	6629	4131	4416	4250	4338
12.0 - 12.5		--	--	--	--	--	--	--	--	--	--	--	--
12.5 - 13.0		--	--	--	--	--	--	4351	--	--	--	--	--
13.0 - 13.5		--	--	--	--	--	--	4455	--	--	--	--	--
13.5 - 14.0		--	--	--	--	--	--	4518	--	--	--	--	--
14.0 - 14.5		--	--	--	--	--	--	4459	--	--	--	--	--
14.5 - 15.0		--	--	--	--	--	--	4481	--	--	--	--	--
15.0 - 15.5		--	--	--	--	--	--	4324	--	--	--	--	--
15.5 - 16.0		--	--	--	--	--	4806	4443	--	--	--	--	--
16.0 - 16.5		--	--	--	--	--	4858	--	--	--	--	--	--
16.5 - 17.0		--	--	--	--	--	4670	--	--	--	--	--	--
17.0 - 17.5		--	--	--	--	--	4717	--	--	--	--	--	--
17.5 - 18.0		--	--	--	--	--	4582	--	--	--	--	--	--
18.0 - 18.5		--	--	--	--	--	--	--	--	--	--	--	--
18.5 - 19.0		--	--	--	--	--	--	--	--	--	--	--	--
19.0 - 19.5		--	--	--	--	--	--	--	--	--	--	--	--
19.5 - 20.0		--	--	--	--	--	--	--	--	--	--	--	--

Table 4
GTE Operations Support Incorporated
Former Sylvania Electric Products Facility - Hicksville, New York

Sample Identification and Analytical Summary

Location	Gamma Spec. 300 MOD	Isotopic Thorium 3004/RP-725	Isotopic Uranium 3050/RP-725	VOCs Stone	VOCs STL - 8260B	Nickel 7471A
U-148	11.5-12			6.5-7; 9-9.5	9-9.5	
U-149	7-8; 11.5-12			11-11.5		
U-150	2-2.5; 11-12			4-4.5	4-4.5	
U-151	11.5-12			1.5-2		
U-152	11-12			2-2.5		
U-153	2-2.5; 11.5-12	2-2.5	2-2.5	9.5-10		
U-154	1.5-2; 11-12			1.5-2		
U-155	11.5-12			10.5-11		
U-156	11.5-12			9-9.5		
U-157	2.5-3; 11.5-12			9.5-10		
U-158	2.5-3; 11.5-12	2.5-3	2.5-3	6.5-7		
U-159	2-2.5; 11.5-12			1.5-2		
U-160	1.5-3; 11.5-12			2.5-3; 11.5-12		
U-161	1.5-2; 11.5-12			3.5-4		
U-162	2-3.5; 15.5-16	2-3.5	2-3.5	2.5-3		
U-163	2.5-3; 11.5-12	2.5-3	2.5-3	9-9.5		
U-164	10.5-11			4.5-5		
U-165	7.5-8			7.5-8		
U-166	7.5-8			7.5-8		
U-167	2-2.5; 7.5-8			3-3.5	3-3.5	
U-168				16.5-17	16.5-17	
U-169				12.5-13		14.5-15
U-170	10.5-11.5					11-11.5
U-171	11.5-12			4.5-5		
U-172	2.5-3; 11.5-12			3.5-4		
U-173	11.5-12			8.5-9		
U-174	11.5-12			9-9.5		

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Gamma Spectroscopy Data

Compound	U-148 (11.5-12)					U-149 (7-8)					U-149 (11.5-12)					U-150 (2-2.5)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.25	U	0.11	U	Q	0.51	U	0.27	U	Q	0.27	U	0.13	U	Q	0.41		0.31		
Bismuth 212	0.49	U	0.21	U	Q	0.86	U	0.43	U	Q	0.35	U	0.22	U	Q	0.84	U	0.42	U	Q
Bismuth 214	0.16	U	0.069	U	Q	0.39		0.15			0.13	U	0.062	U	Q	0.59		0.18		
Lead 212	0.108		0.056			0.38		0.13			0.089	U	0.046	U	Q	0.55		0.13		
Lead 214	0.084	U	0.062	U	Q	0.53		0.18			0.076		0.055			0.48		0.14		
Potassium 40	5.2		1.2			5.6		1.4			4.2		1.2			12.8		2.5		
Protactinium 234M	4.9	U	3.6	U	Q	85		19			28.3		8.2			22		9.5		
Radium (226)	0.23	U	0.11	U	Q	0.35	U	0.18	U	Q	0.19	U	0.12	U	Q	0.58	J	0.19		
Radium 228	0.29	U	0.14	U	Q	0.55	U	0.29	U	Q	0.27	U	0.13	U	Q	0.72		0.29		
Thallium 208	0.071	U	0.032	U	Q	0.147		0.068			0.057	U	0.029	U	Q	0.206		0.078		
Thorium 232	0.2	U	0.085	U	Q	0.41		0.19			0.16	U	0.08	U	Q	0.57		0.21		
Thorium 234	0.54	U	0.25	U	Q	73		10			21		3			21		2.9		
Uranium 235	0.53	U	0.26	U	Q	4.1		1.1			0.88		0.32			0.96		0.4		
Uranium 238	0.92	U	0.47	U	Q	86		10			22.6		3.9			23.6		3.9		

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Gamma Spectroscopy Data

Compound	U-150 (11-12)					U-151 (11.5-12)					U-152 (11-12)					U-153 (2-2.5)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.28	U	0.13	U	Q	0.31	U	0.15	U	Q	0.34	U	0.16	U	Q	4.8		1.4		
Bismuth 212	0.59	U	0.31	U	Q	0.43	U	0.23	U	Q	0.5	U	0.23	U	Q	2.8		1.2		
Bismuth 214	0.15	U	0.07	U	Q	0.15	U	0.069	U	Q	0.17	U	0.079	U	Q	0.58		0.23		
Lead 212	0.089		0.073			0.145		0.075			0.154		0.065			3.63		0.51		
Lead 214	0.14	U	0.069	U	Q	0.12	U	0.062	U	Q	0.183		0.094			0.79		0.27		
Potassium 40	3.4		1.2			4.1		1.2			6.4		1.4			7.1		1.9		
Protactinium 234M	12	U	5.8	U	Q	8	U	3.6	U	Q	14	U	6.5	U	Q	125		28		
Radium (226)	0.23	U	0.12	U	Q	0.21	U	0.12	U	Q	0.22	U	0.1	U	Q	0.67	J	0.31		
Radium 228	0.34	U	0.18	U	Q	0.3	U	0.16	U	Q	0.31	U	0.16	U	Q	3.02		0.73		
Thallium 208	0.07	U	0.035	U	Q	0.08	U	0.038	U	Q	0.074	U	0.034	U	Q	1.16		0.25		
Thorium 232	0.2	U	0.096	U	Q	0.22	U	0.1	U	Q	0.21	U	0.097	U	Q	3.24		0.67		
Thorium 234	4.9		1.2			1.52		0.71			9.8		1.5			116		15		
Uranium 235	0.75	U	0.41	U	Q	0.64	U	0.37	U	Q	0.71	U	0.25	U	Q	6.4		1.6		
Uranium 238	6.4		1.5			2.2		1.1			10		1.8			112		14		

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Gamma Spectroscopy Data

Compound	U-153 (11.5-12)					U-154 (1.5-2)					U-154 (11-12)					U-155 (11.5-12)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.29	U	0.14	U	Q	0.66	U	0.35	U	Q	0.33	U	0.15	U	Q	0.37	U	0.23	U	Q
Bismuth 212	0.44	U	0.2	U	Q	1	U	0.49	U	Q	0.58	U	0.28	U	Q	0.45	U	0.22	U	Q
Bismuth 214	0.16	U	0.073	U	Q	0.72		0.23			0.25		0.11			0.214		0.092		
Lead 212	0.092	U	0.066	U	Q	0.71		0.14			0.183		0.071			0.267		0.074		
Lead 214	0.167		0.079			0.58		0.17			0.3		0.11			0.198		0.087		
Potassium 40	5.9		1.3			8.2		1.7			5.9		1.3			7.8		1.6		
Protactinium 234M	10	U	4.5	U	Q	101		23			7.4	U	3.7	U	Q	7.2	U	3.5	U	Q
Radium (226)	0.22	U	0.13	U	Q	0.77	J	0.31			0.27	U	0.13	U	Q	0.27	J	0.12		
Radium 228	0.31	U	0.14	U	Q	0.7	U	0.47	U	Q	0.37	U	0.17	U	Q	0.37	U	0.18	U	Q
Thallium 208	0.074	U	0.033	U	Q	0.253		0.093			0.097	U	0.042	U	Q	0.14		0.047		
Thorium 232	0.21	U	0.092	U	Q	0.71		0.25			0.27	U	0.12	U	Q	0.39		0.13		
Thorium 234	3.33		0.88			76		10			0.64	U	0.33	U	Q	2		0.68		
Uranium 235	0.57	U	0.3	U	Q	4.2		1.4			0.56	U	0.3	U	Q	0.51	U	0.29	U	Q
Uranium 238	3.2		1			78.8		9.5			1.1	U	0.59	U	Q	1.4		1.1		

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Gamma Spectroscopy Data

Compound	U-158 (11.5-12)					U-159 (2-2.5)					U-159 (11.5-12)					U-160 (1.5-3)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.32	U	0.15	U	Q	1.17		0.55			0.25	U	0.11	U	Q	1.43		0.53		
Bismuth 212	0.4	U	0.21	U	Q	1.2	U	0.54	U	Q	0.45	U	0.2	U	Q	0.97	U	0.5	U	Q
Bismuth 214	0.209		0.076			0.93		0.26			0.14	U	0.075	U	Q	0.39		0.17		
Lead 212	0.091		0.054			1.05		0.22			0.069		0.06			1.45		0.23		
Lead 214	0.16		0.066			1		0.23			0.12	U	0.057	U	Q	0.51		0.17		
Potassium 40	5.9		1.4			10.6		2.5			3.3		1.2			6.6		1.5		
Protactinium 234M	6.5	U	3.3	U	Q	14	U	6.8	U	Q	7.3	U	3.6	U	Q	39		12		
Radium (226)	0.2	U	0.099	U	Q	0.84	J	0.31			0.18	U	0.088	U	Q	0.5	J	0.21		
Radium 228	0.23	U	0.12	U	Q	0.92		0.49			0.27	U	0.13	U	Q	1.54		0.45		
Thallium 208	0.07	U	0.032	U	Q	0.29		0.11			0.051	U	0.025	U	Q	0.41		0.11		
Thorium 232	0.2	U	0.09	U	Q	0.81		0.31			0.14	U	0.07	U	Q	1.14		0.31		
Thorium 234	0.49	U	0.25	U	Q	1.4	U	0.73	U	Q	0.49	U	0.25	U	Q	35.8		5.2		
Uranium 235	0.43	U	0.23	U	Q	1.1	U	0.64	U	Q	0.42	U	0.22	U	Q	1.6		1		
Uranium 238	0.78	U	0.4	U	Q	2.1	U	1.1	U	Q	0.87	U	0.45	U	Q	38.9		5.2		

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Gamma Spectroscopy Data

Compound	U-160 (11.5-12)					U-161 (1.5-2)					U-161 (11.5-12)					U-162 (2-3.5)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.61		0.31			2.26		0.73			0.41	U	0.23	U	Q	3.7		1.1		
Bismuth 212	0.92	U	0.42	U	Q	1.61		0.65			0.52	U	0.28	U	Q	2.6		1		
Bismuth 214	0.84		0.22			0.4		0.17			0.28		0.09			0.34		0.17		
Lead 212	0.75		0.14			2.26		0.32			0.217		0.071			3.3		0.46		
Lead 214	0.83		0.21			0.32		0.14			0.187		0.08			0.46		0.22		
Potassium 40	8.7		1.8			7.5		1.7			4.5		1.2			7.3		1.6		
Protactinium 234M	11	U	5.7	U	Q	60		14			12	U	5.3	U	Q	130		24		
Radium (226)	0.85	J	0.25			0.3	J	0.19			0.23	U	0.11	U	Q	0.43	U	0.25	U	Q
Radium 228	0.72		0.33			2.13		0.55			0.39	U	0.19	U	Q	2.9		0.68		
Thallium 208	0.255		0.091			0.79		0.17			0.081	U	0.039	U	Q	1.14		0.22		
Thorium 232	0.71		0.25			2.22		0.45			0.23	U	0.11	U	Q	3.19		0.56		
Thorium 234	0.96	U	0.58	U	Q	37.1		5			3.22		0.79			123		16		
Uranium 235	0.85	U	0.48	U	Q	1.44		0.55			0.6	U	0.32	U	Q	5.4		1.3		
Uranium 238	1.7	U	0.93	U	Q	34.1		4.6			3.8		1.2			117		15		

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Gamma Spectroscopy Data

Compound	U-162 (15.5-16)					U-163 (2.5-3)					U-163 (11.5-12)					U-164 (10.5-11)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.29	U	0.14	U	Q	1.01		0.4			0.27	U	0.13	U	Q	0.33	U	0.15	U	Q
Bismuth 212	0.43	U	0.19	U	Q	0.81	U	0.41	U	Q	0.32	U	0.18	U	Q	0.5	U	0.24	U	Q
Bismuth 214	0.18	U	0.087	U	Q	0.21	U	0.13	U	Q	0.193		0.083			0.199		0.087		
Lead 212	0.105		0.047			0.6		0.16			0.075		0.061			0.139		0.064		
Lead 214	0.12	U	0.058	U	Q	0.39		0.14			0.12	U	0.056	U	Q	0.21		0.1		
Potassium 40	3.74		0.94			5.5		1.4			5.4		1.2			4.7		1.1		
Protactinium 234M	7.9	U	4.1	U	Q	54		13			6.3	U	2.9	U	Q	5.9	U	3.3	U	Q
Radium (226)	0.19	U	0.091	U	Q	0.33	J	0.19			0.18	U	0.094	U	Q	0.27	J	0.14		
Radium 228	0.27	U	0.14	U	Q	0.65		0.26			0.26	U	0.13	U	Q	0.28	U	0.15	U	Q
Thallium 208	0.075	U	0.034	U	Q	0.258		0.089			0.076	U	0.036	U	Q	0.075	U	0.035	U	Q
Thorium 232	0.21	U	0.096	U	Q	0.72		0.24			0.21	U	0.099	U	Q	0.21	U	0.096	U	Q
Thorium 234	3.23		0.77			46		6.1			0.5	U	0.25	U	Q	0.55	U	0.28	U	Q
Uranium 235	0.48	U	0.28	U	Q	2.04		0.78			0.39	U	0.21	U	Q	0.49	U	0.26	U	Q
Uranium 238	3.2		1			46.6		6.1			0.84	U	0.43	U	Q	0.92	U	0.49	U	Q

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Gamma Spectroscopy Data

Compound	U-165 (7.5-8)					U-166 (7.5-8)					U-167(2-2.5)					U-167(7.5-8)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.53	U	0.3	U	Q	0.32	U	0.15	U	Q	2.8		0.85			0.66		0.3		
Bismuth 212	0.7	U	0.31	U	Q	0.51	U	0.26	U	Q	1.97		0.64			0.63	U	0.31	U	Q
Bismuth 214	0.36		0.12			0.26		0.11			0.35		0.12			0.49		0.14		
Lead 212	0.32		0.11			0.192		0.057			2.06		0.3			0.39		0.12		
Lead 214	0.34		0.13			0.307		0.097			0.23		0.12			0.46		0.14		
Potassium 40	4.7		1.3			10.9		2			26.9		9.3			8.6		1.8		
Protactinium 234M	13	U	5.9	U	Q	8.5	U	4.3	U	Q	0.4	J	0.19			11	U	5.2	U	Q
Radium (226)	0.32	J	0.14			0.28	J	0.15			1.77		0.53			0.45	J	0.16		
Radium 228	0.55	U	0.32	U	Q	0.35	U	0.17	U	Q	0.64		0.14			0.54		0.28		
Thallium 208	0.192		0.065			0.078	U	0.037	U	Q	1.79		0.37			0.226		0.064		
Thorium 232	0.54		0.18			0.22	U	0.1	U	Q	25.6		3.5			0.63		0.17		
Thorium 234	6.4		1.3			0.62	U	0.34	U	Q	1.99		0.69			1.89		0.64		
Uranium 235	0.8	U	0.43	U	Q	0.45	U	0.28	U	Q	25.9		3.8			0.68	U	0.38	U	Q
Uranium 238	6.5		1.8			1	U	0.55	U	Q						1.79		0.97		

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Table 5
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Gamma Spectroscopy Data

Compound	U-173(11.5-12)					U-174(11.5-12)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD										
Actinium 228	0.36	U	0.18	U	Q	0.23	U	0.096	U	Q
Bismuth 212	0.5	U	0.22	U	Q	0.25	U	0.17	U	Q
Bismuth 214	0.14	U	0.065	U	Q	0.18	U	0.089	U	Q
Lead 212	0.071	U	0.057	U	Q	0.07		0.053		
Lead 214	0.11	U	0.079	U	Q	0.14	U	0.065	U	Q
Potassium 40	6.9		1.5			4.1		1.3		
Protactinium 234M	7.3	U	3.9	U	Q	6.9	U	3.2	U	Q
Radium (226)	0.25	J	0.1			0.19	U	0.093	U	Q
Radium 228	0.29	U	0.14	U	Q	0.34	U	0.16	U	Q
Thallium 208	0.067	U	0.031	U	Q	0.07	U	0.031	U	Q
Thorium 232	0.19	U	0.087	U	Q	0.19	U	0.087	U	Q
Thorium 234	0.49	U	0.25	U	Q	0.61	U	0.29	U	Q
Uranium 235	0.37	U	0.24	U	Q	0.45	U	0.24	U	Q
Uranium 238	0.84	U	0.46	U	Q	0.95	U	0.48	U	Q

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Table 6
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Alpha Spectroscopy Data

Compound	U-153 (2-2.5)					U-158 (2.5-3)					U-162 (2-3.5)					U-163 (2.5-3)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
3004/RP-725																				
Thorium 228	6.1		1.4			1.19		0.46			6.8		1.6			1.27		0.44		
Thorium 230	2.71		0.76			1.93		0.61			2.33		0.66			1.01		0.38	J	z
Thorium 232	7.5		1.7			1.22		0.45			6.6		1.5			0.89		0.35		
Uranium 234	135		27			85		17			248		49			95		19		
Uranium 235	8.2		2			4.8		1.3			10.8		2.6			4.2		1.2		
Uranium 238	131		26			78		15			237		47			91		18		

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Stone Environmental
Volatile Organic Compound Data

Hole #	U148			U148			U-149			U-150			U-151			U152		
Depth, BGS	6.5-7			9-9.5			11-11.5			4-4.5			1.5 - 2			2 - 2.5		
Lab ID	test017			test019			test12			test014			test009			test011		
Sample Date	4/10/2003			4/10/2003			4/10/2003			4/10/2003			4/10/2003			4/10/2003		
Date Analyzed	4/11/2003		DV Q	4/11/2003		DV Q	4/10/2003		DV Q	4/10/2003		DV Q	4/10/2003		DV Q	4/10/2003		DV Q
Field PID Reading																		
Sample Wet Weight, grams	11.1			13.0			12.4			12.6			11.2			11.7		
DV, ml	2.0			2.0			2.0			2.0			2.0			2.0		
Vinyl Chloride	0.433	U		0.369	U		0.387	U	UJ, s	0.382	U		0.428	U	UJ, m	0.410	U	
trans-Dichloroethene	0.108	U		0.092	U		0.097	U	UJ, s	0.096	U		0.107	U		0.103	U	
cis-Dichloroethene	0.108	U		0.092	U		0.097	U	UJ, s	0.096	U		0.107	U		0.103	U	
Benzene	0.108	U		0.092	U		0.097	U	UJ, s	0.096	U		0.107	U		0.103	U	
Trichloroethene	0.108	U		0.092	U		0.097	U	UJ, s	0.096	U		0.107	U		0.103	U	
Toluene	0.108	U		0.092	U		0.097	U	UJ, s	0.096	U		0.107	U		0.103	U	
Tetrachloroethene	0.108	U		0.092	U		0.097	U	UJ, s	0.201		J, s	2.738		J, m	1.651		
Ethylbenzene	0.108	U		0.092	U		0.097	U	UJ, s	0.096	U		0.107	U	UJ, m	0.103	U	
m,p - Xylene	0.108	U		0.092	U		0.097	U	UJ, s	0.096	U		0.107	U		0.103	U	
o-Xylene	0.108	U		0.092	U		0.097	U	UJ, s	0.096	U		0.107	U	UJ, m	0.103	U	
Total Petroleum Hydrocarbon	2.164	U	S, Q	1.845	U	S, Q	1.934	U	S, Q	1.911	U	S, Q	2.139	U	S, Q	2.051	U	S, Q
Surrogate % Recovery	84			258.4*			NA			98			85.2			85		

Notes:

All Results Given as mg/kg

Q = lack of QC information

J = Estimated

s = surrogate failure

UJ - detection limit inaccurate

ND = not detected

m = ms/msd recovery failure

U = not detected

S = Screening data

* Surrogate double spiked

D = diluted analysis

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Stone Environmental
Volatile Organic Compound Data

Hole #	U-153			U154			U-155			U156			U157			U158		
Depth, BGS	9.5-10			1.5-2			10.5-11			9-9.5			9.5-10			8.5-9		
Lab ID	test013			test016			test010			test015			test018			test005		
Sample Date	4/10/2003			4/10/2003			4/10/2003			4/10/2003			4/10/2003			4/10/2003		
Date Analyzed	4/10/2003		DV Q	4/10/2003		DV Q	4/10/2003		DV Q	4/10/2003		DV Q	4/11/2003		DV Q	4/11/2003		DV Q
Field PID Reading																		
Sample Wet Weight, grams	12.0			12.7			12.5			12.4			12.0			11.4		
DV, ml	2.0			1.6			2.0			2.0			2.0			2.0		
Vinyl Chloride	0.400	U		0.474	U		0.385	U		0.388	U		0.401	U		0.420	U	
trans-Dichloroethene	0.100	U		0.118	U		0.096	U		0.097	U		0.100	U		0.105	U	
cis-Dichloroethene	0.100	U		0.118	U		0.096	U		0.097	U		0.100	U		0.105	U	
Benzene	0.100	U		0.118	U		0.096	U		0.097	U		0.100	U		0.105	U	
Trichloroethene	0.100	U		0.118	U		0.096	U		0.097	U		0.100	U		0.105	U	
Toluene	0.100	U		0.118	U		0.096	U		0.097	U		0.100	U		0.105	U	
Tetrachloroethene	0.100	U		1.626		J, s	0.453			0.174			ND			1.258		
Ethylbenzene	0.100	U		0.118	U		0.096	U		0.097	U		0.100	U		0.105	U	
m,p - Xylene	0.100	U		0.118	U		0.096	U		0.097	U		0.100	U		0.105	U	
o-Xylene	0.100	U		0.118	U		0.096	U		0.097	U		0.100	U		0.105	U	
Total Petroleum Hydrocarbon	1.998	U	S, Q	2.370	U	S, Q	1.926	U	S, Q	1.940	U	S, Q	2.005	U	S, Q	2.102	U	S, Q
Surrogate % Recovery	101			82			89			89			197*			84		

Notes:

All Results Given as mg/kg

Q = lack of QC information

J = Estimated

s = surrogate failure

UJ - detection limit inaccurate

ND = not detected

m = ms/msd recovery failure

U = not detected

S = Screening data

* Surrogate double spiked

D = diluted analysis

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Stone Environmental
Volatile Organic Compound Data

Hole #	U159			U160			U160			U161			U162			U163		
Depth, BGS	1.5-2			11.5-12			2.5-3			3.5-4			2.5-3			9-9.5		
Lab ID	test020			test024			test022			test037			test023			test036		
Sample Date	4/10/2003			4/11/2003			4/11/2003			4/11/2003			4/11/2003			4/11/2003		
Date Analyzed	4/11/2003		DV Q	4/11/2003		DV Q	4/11/2003		DV Q	4/11/2003		DV Q	4/11/2003		DV Q	4/11/2003		DV Q
Field PID Reading																		
Sample Wet Weight, grams	11.4			11.5			12.7			11.6			11.5			12.3		
DV, ml	2.0			2.0			2.0			2.0			2.0			2.0		
Vinyl Chloride	0.423	U	UJ, s	0.419	U		0.379	U	UJ, s	0.416	U	UJ, s	0.418	U		0.391	U	
trans-Dichloroethene	0.106	U	UJ, s	0.105	U		0.113		J, s	0.104	U	UJ, s	0.105	U		0.098	U	
cis-Dichloroethene	0.106	U	UJ, s	0.105	U		7.471	D	J, s	0.104	U	UJ, s	0.105	U		0.098	U	
Benzene	0.106	U	UJ, s	0.105	U		0.095	U	UJ, s	0.104	U	UJ, s	0.105	U		0.098	U	
Trichloroethene	0.106	U	UJ, s	0.105	U		0.095	U	UJ, s	ND	U	UJ, s	0.105	U		0.098	U	
Toluene	0.106	U	UJ, s	0.105	U		0.095	U	UJ, s	0.104	U	UJ, s	0.105	U		0.098	U	
Tetrachloroethene	0.621		J, s	ND			0.095	U	UJ, s	10.301	D		0.416			ND		
Ethylbenzene	0.106	U	UJ, s	0.105	U		0.095	U	UJ, s	0.104	U	UJ, s	0.105	U		0.098	U	
m,p - Xylene	0.106	U	UJ, s	0.105	U		0.095	U	UJ, s	0.104	U	UJ, s	0.105	U		0.098	U	
o-Xylene	0.106	U	UJ, s	0.105	U		0.095	U	UJ, s	0.104	U	UJ, s	0.105	U		0.098	U	
Total Petroleum Hydrocarbon	2.113	U	S, Q	2.096	U	S, Q	1.897	U	S, Q	2.078	U	S, Q	2.091	U	S, Q	1.954	U	S, Q
Surrogate % Recovery	74			78			72			88			76			75		

Notes:

All Results Given as mg/kg

Q = lack of QC information

J = Estimated

s = surrogate failure

UJ - detection limit inaccurate

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Stone Environmental
Volatile Organic Compound Data

Hole #	U164			U165			U166			U167			U168			U169		
Depth, BGS	4.5-5			7.5-8			7.5-8			3-3.5			16.5-17			12.5-13		
Lab ID	test035			test034			test033			test044			test045			test039		
Sample Date	4/11/2003			4/11/2003			4/11/2003			4/12/2003			4/12/2003			4/12/2003		
Date Analyzed	4/11/2003		DV Q	4/11/2003		DV Q	4/11/2003		DV Q	4/12/2003		DV Q	4/12/2003		DV Q	4/12/2003		DV Q
Field PID Reading										114			985			0.6		
Sample Wet Weight, grams	12.4			11.9			11.5			10.8			13.01			10.5		
DV, ml	2.0			2.0			2.0			2.0			0.500			2.0		
Vinyl Chloride	0.387	U		0.402	U		0.417	U		0.444	U		1.476	U		0.457	U	
trans-Dichloroethene	0.097	U		0.101	U		0.104	U		0.111	U		0.369	U		0.114	U	
cis-Dichloroethene	0.097	U		0.101	U		0.104	U		1.738			0.369	U		0.114	U	
Benzene	0.097	U		0.101	U		0.104	U		0.111	U		0.369	U		0.114	U	
Trichloroethene	0.097	U		0.101	U		0.104	U		0.111	U		0.373			0.114	U	
Toluene	0.097	U		0.101	U		0.104	U		0.111	U		0.369	U		0.114	U	
Tetrachloroethene	ND			0.101	U		0.104	U		0.217			409.447	D		0.114	U	
Ethylbenzene	0.097	U		0.101	U		0.104	U		0.111	U		0.369	U		0.114	U	
m,p - Xylene	0.097	U		0.101	U		0.104	U		0.111	U		0.369	U		0.114	U	
o-Xylene	0.097	U		0.101	U		0.104	U		0.111	U		0.369	U		0.114	U	
Total Petroleum Hydrocarbon	1.937	U	S, Q	2.012	U	S, Q	2.087	U	S, Q	2	U	S, Q	19.333		S, Q	2	U	S, Q
Surrogate % Recovery	90			81			96			102			100			78		

Notes:	ND = not detected
All Results Given as mg/kg	m = recovery failure
Q = lack of QC information	U = not detected
J = Estimated	S = Screening data
s = surrogate failure	*Surrogate double spiked
UJ - detection limit inaccurate	D = diluted analysis

Table 7
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Stone Environmental
Volatile Organic Compound Data

Hole #	U171			U172			U173			U174		
Depth, BGS	4.5-5			3.5-4			8.5-9			9-9.5		
Lab ID	test043			test038			test040			test041		
Sample Date	4/12/2003			4/12/2003			4/12/2003			4/12/2003		
Date Analyzed	4/14/2003		DV Q	4/14/2003		DV Q	4/14/2003		DV Q	4/14/2003		DV Q
Field PID Reading	0.9			1.2			1.6			0		
Sample Wet Weight, grams	13.01			12.04			15.54			12.25		
DV, ml	2.0			2.0			2.0			2.0		
Vinyl Chloride	0.369	U		0.399	U		0.309	U		0.392	U	
trans-Dichloroethene	0.092	U		0.100	U		0.077	U		0.098	U	
cis-Dichloroethene	0.092	U		0.100	U		0.077	U		0.098	U	
Benzene	0.092	U		0.100	U		0.077	U		0.098	U	
Trichloroethene	0.092	U		0.100	U		0.077	U		0.000	U	
Toluene	0.092	U		0.100	U		0.077	U		0.098	U	
Tetrachloroethene	0.092	U		0.100	U		0.077	U		0.098	U	
Ethylbenzene	0.092	U		0.100	U		0.077	U		0.098	U	
m,p - Xylene	0.092	U		0.100	U		0.077	U		0.098	U	
o-Xylene	0.092	U		0.100	U		0.077	U		0.098	U	
Total Petroleum Hydrocarbon	1.845	U	S, Q	1.993	U	S, Q	1.544	U	S, Q	1.959	U	S, Q
Surrogate % Recovery	98			90			78			93		

Notes:

All Results Given as mg/kg	ND = not detected
Q = lack of QC information	m = ms/msd recovery failure
J = Estimated	U = not detected
s = surrogate failure	S = Screening data
UJ - detection limit inaccurate	* Surrogate double spiked
	D = diluted analysis

Table 8
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Volatile Organic Compound Data

Hole #	U148		U-150		U167		U168	
Depth, BGS	9-9.5		4-4.5		3-3.5		16.5-17	
Sample Date	4/10/2003		4/10/2003		4/12/2003		4/12/2003	
Date Analyzed	4/15/2003	DV Q	4/10/2003	DV Q	4/12/2003	DV Q	4/12/2003	DV Q
Field PID Reading	--		--		114		985	
Sample Wet Weight, grams								
DV, ml								
VC - Raw, mg/L								
Vinyl Chloride	ND		ND		0.0093	J	ND	
t-DCE - Raw, mg/L								
trans-Dichloroethene	ND		ND				ND	
c-DCE - Raw,mg/L								
cis-Dichloroethene	ND		ND		1.4		ND	
Benzene - Raw,mg/L								
Benzene	ND		ND				ND	
TCE - TCLP					0.0067	J	0.005	J
Trichloroethene	ND		ND		0.140		ND	
Toluene - Raw, mg/L								
Toluene	0.00085	J	0.00048	J	ND		ND	
PCE - TCLP					0.045	J	4.2	E
Tetrachloroethene	0.016		0.016		0.690		440	
Ethylbenzene - Raw, mg/L								
Ethylbenzene	ND		ND		ND		ND	
m,p-Xylene - Raw, mg/L								
m,p - Xylene	ND		ND		ND		ND	
o-Xylene - Raw, mg/L								
o-Xylene	ND		ND		ND		ND	

Notes:

All results are given in mg/kg.

J = Estimated

Table 9
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksille, New York

Severn Trent Laboratory
Nickel Data

Hole #	U169			U170		
Depth, BGS	14.5-15			11-11.5		
Sample Date	4/12/2003			4/12/2003		
Date Analyzed	4/12/2003	DV	Q	4/16/2003	DV	Q
Field PID Reading	--			--		
Sample Wet Weight, grams						
DV, ml						
Nickel	55.1	N*		28000.0	N*	

Notes:

All results are given in mg/kg.

N = MS/MSD recovery outside the control limit.

* = RPD is out of range for the laboratory duplicate sample or MS/MSD

FIGURES

SCALE: 1:24 000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

NORTH

MAP REFERENCE:

PORTION OF U.S.G.S. QUADRANGLE MAP
7 ½ MINUTE SERIES (TOPOGRAPHIC)
HICKSVILLE, NEW YORK 1967
PHOTOREVISED 1979

NYSDEC: V 00089-1; URS: 27010-039

QUADRANGLE LOCATION

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 1
SITE LOCATION MAP

DATE: MAY 3, 2002	URS
JOB NO.: 27010-039-007	1701 GOLF ROAD, SUITE 1000 ROLLING MEADOWS, ILLINOIS 60008
DRAWN BY: MAR / CHK'D BY: CS	PHONE: 847.228.0707
SCALE: AS SHOWN	FAX: 847.228.1115

0 40 80 160
SCALE IN FEET

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

LEGEND:

- = CURRENT BUILDINGS
- SB-018 ▲ = SOIL BORING LOCATION
- U-051 ▫ = SOIL BORING LOCATION
- U-164 ▫ = NEW SOIL BORING LOCATION

HISTORIC STRUCTURES

LP = LEACHING POOL	CT = CISTERN	HY = HYDRANT
DW = DRY WELL	ST = SEPTIC TANKS	CP = CESSPOOL
DR = DRAIN	IL = INLET	WM = WATER METER PIT

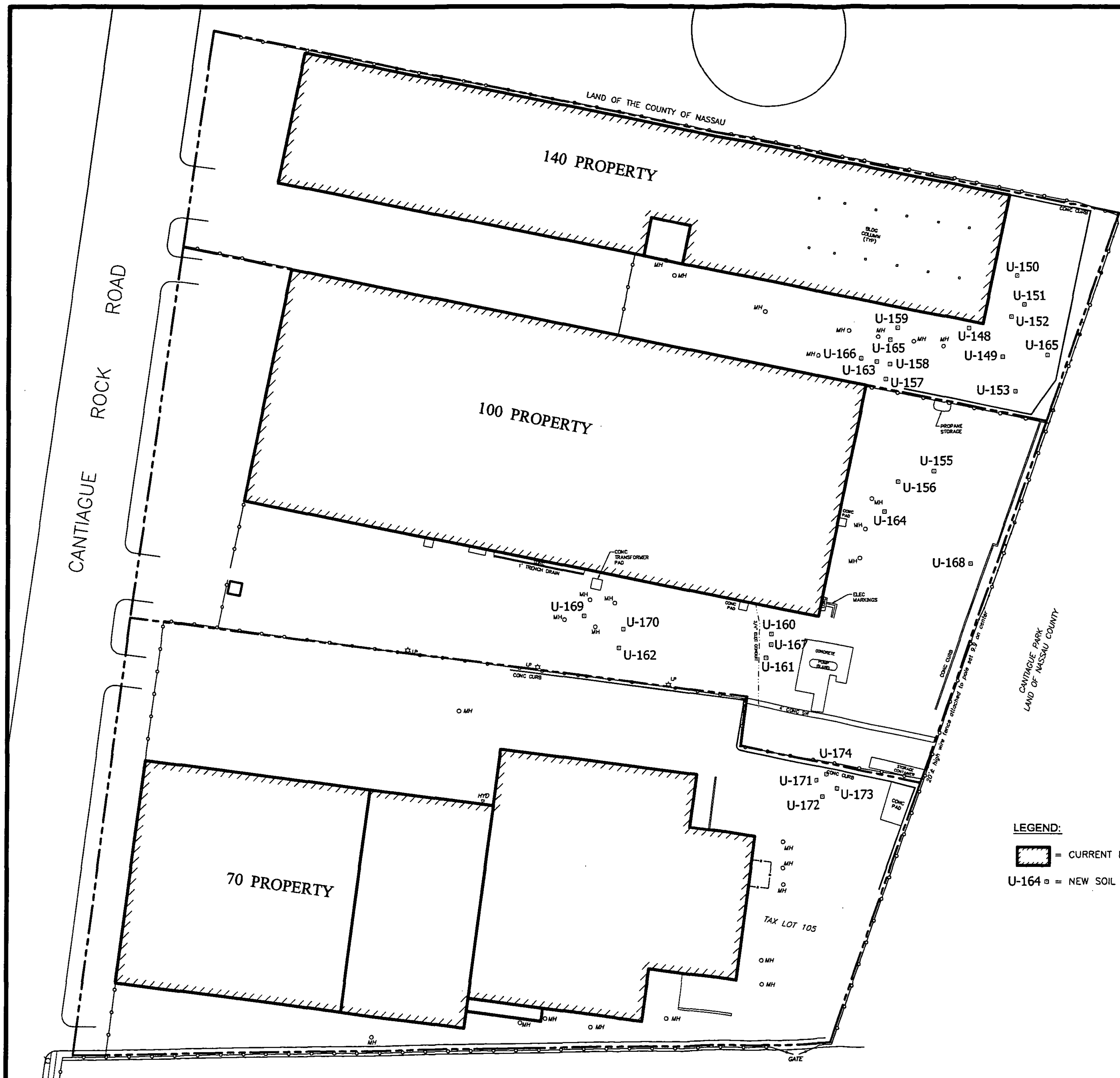
SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 2
CURRENT SITE MAP SHOWING BORING LOCATIONS

DATE: JUNE 4, 2003
JOB NO.: 27010-039-007
DRAWN BY: MAR CHK'D BY: CS
SCALE: AS SHOWN

URS
1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115



Hole #	U169			U170		
Depth, BGS	14.5-15			11-11.5		
Sample Date	4/12/2003			4/12/2003		
Date Analyzed	4/12/2003	DV	Q	4/16/2003	DV	Q
Field PID Reading	--			--		
Sample Wet Weight, grams						
DV, ml						
Nickel	55.1	N*		28000.0	N*	

Notes:
All results are given in mg/kg.
N = MS/MSD recovery outside the control limit.
* = RPD is out of range for the laboratory duplicate sample or MS/MSD

Hole #	U148		U-150		U167		U168	
Depth, BGS	9-9.5		4-4.5		3-3.5		16.5-17	
Sample Date	4/10/2003		4/10/2003		4/12/2003		4/12/2003	
Date Analyzed	4/15/2003	DV Q	4/10/2003	DV Q	4/12/2003	DV Q	4/12/2003	DV Q
Field PID Reading	--		--		114		985	
Sample Wet Weight, grams								
DV, ml								
VC - Raw, mg/L								
Vinyl Chloride	ND		ND		0.0093	J	ND	
t-DCE - Raw, mg/L								
trans-Dichloroethene	ND		ND				ND	
c-DCE - Raw,mg/L								
cis-Dichloroethene	ND		ND		1.4		ND	
Benzene - Raw,mg/L								
Benzene	ND		ND				ND	
TCE - TCLP					0.0067	J	0.005	J
Trichloroethene	ND		ND		**0.140**		**ND**	
Toluene - Raw, mg/L								
Toluene	0.00085	J	0.00048	J	ND		ND	
PCE - TCLP					0.045	J	4.2	E
Tetrachloroethene	0.016		0.016		**0.690**		**440**	
Ethylbenzene - Raw, mg/L								
Ethylbenzene	ND		ND		ND		ND	
m,p-Xylene - Raw, mg/L								
m,p - Xylene	ND		ND		ND		ND	
o-Xylene - Raw, mg/L								
o-Xylene	ND		ND		ND		ND	

Notes:
All results are given in mg/kg.
J = Estimated

SOILS SAMPLES ANALYZED BY SEVERN TRENT LABORATORY

LEGEND:
= CURRENT BUILDINGS
U-164 = NEW SOIL BORING LOCATION

0 40 80 160
SCALE IN FEET

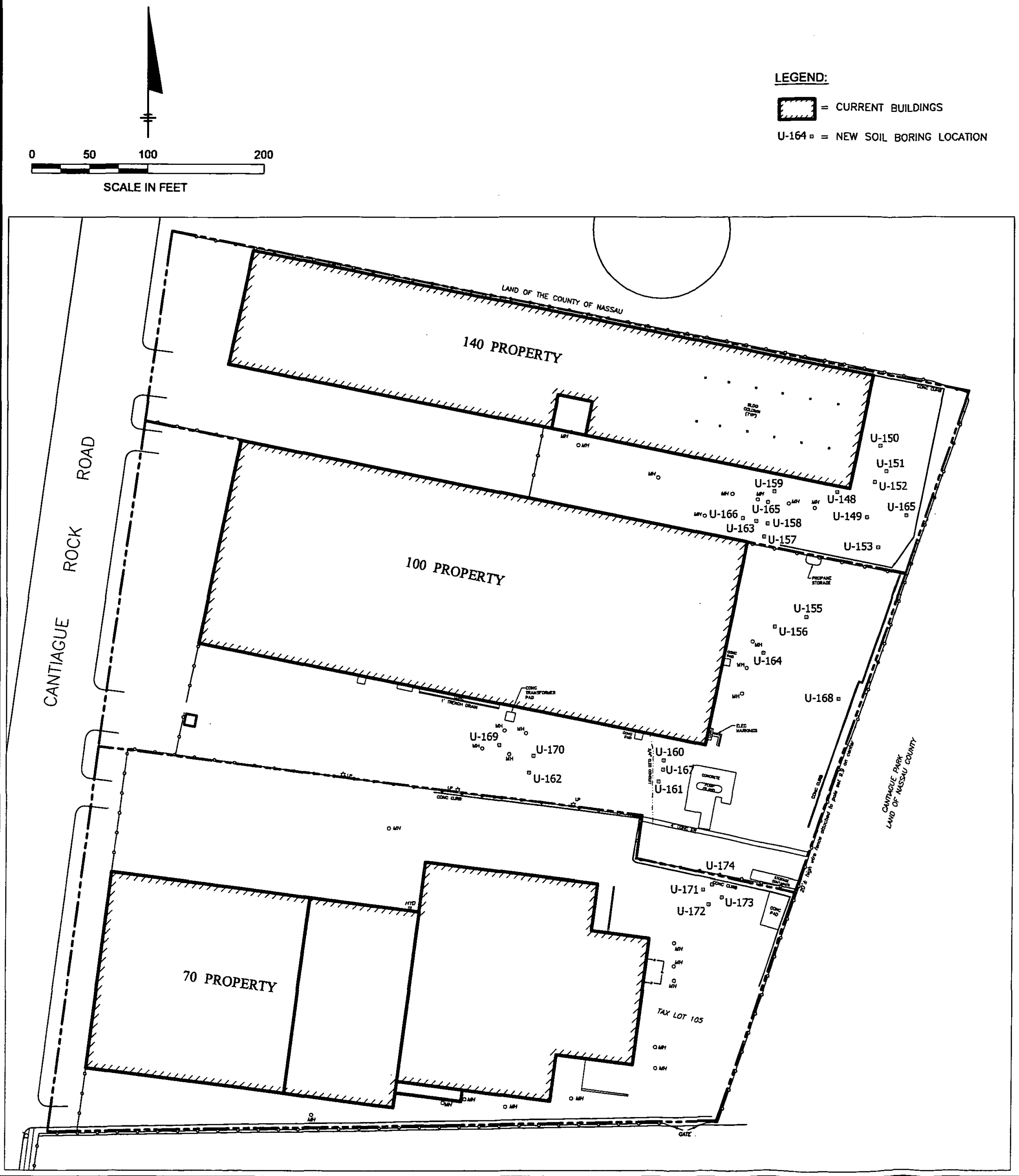
SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 3
VOLATILE ORGANIC COMPOUNDS AND NICKEL RESULTS

DATE: JUNE 30, 2003
JOB NO.: 27010-039-007
DRAWN BY: MAR
CHK'D BY: CS
SCALE: AS SHOWN

URS
1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115



Hole #	U148	U148	U-149	U-150	U-151	U152	U-153	U154
Depth, BGS	6.5-7	9-9.5	11-11.5	4-4.5	1.5 - 2	2 - 2.5	9.5-10	1.5-2
Lab ID	test017	test019	test12	test014	test009	test011	test013	test016
Sample Date	4/10/2003	4/10/2003	4/10/2003	4/10/2003	4/10/2003	4/10/2003	4/10/2003	4/10/2003
Trichloroethene	0.108 U	0.092 U	0.097 U UJ, s	0.096 U	0.107 U	0.103 U	0.100 U	0.118 U
Tetrachloroethene	0.108 U	0.092 U	0.097 U UJ, s	0.201 J, s	2.738 J, m	1.651	0.100 U	1.626 J, s

Hole #	U-155	U156	U157	U158	U159	U160	U160	U161
Depth, BGS	10.5-11	9-9.5	9.5-10	8.5-9	1.5-2	11.5-12	2.5-3	3.5-4
Lab ID	test010	test015	test018	test005	test020	test024	test022	test037
Sample Date	4/10/2003	4/10/2003	4/10/2003.	4/10/2003	4/10/2003	4/11/2003	4/11/2003	4/11/2003
Trichloroethene	0.096 U	0.097 U	0.100 U	0.105 U	0.106 U UJ, s	0.105 U	0.095 U UJ, s	ND U UJ, s
Tetrachloroethene	0.453	0.174	ND	1.258	0.621 J, s	ND	0.095 U UJ, s	10.301 D

Hole #	U162	U163	U164	U165	U166	U167	U168	U169
Depth, BGS	2.5-3	9-9.5	4.5-5	7.5-8	7.5-8	3-3.5	16.5-17	12.5-13
Lab ID	test023	test036	test035	test034	test033	test044	test045	test039
Sample Date	4/11/2003	4/11/2003	4/11/2003	4/11/2003	4/11/2003	4/12/2003	4/12/2003	4/12/2003
Trichloroethene	0.105 U	0.098 U	0.097 U	0.101 U	0.104 U	0.111 U	0.373	0.114 U
Tetrachloroethene	0.416	ND	ND	0.101 U	0.104 U	0.217	409.447 D	0.114 U

Hole #	U171	U172	U173	U174
Depth, BGS	4.5-5	3.5-4	8.5-9	9-9.5
Lab ID	test043	test038	test040	test041
Sample Date	4/12/2003	4/12/2003	4/12/2003	4/12/2003
Trichloroethene	0.092 U	0.100 U	0.077 U	0.000 U
Tetrachloroethene	0.092 U	0.100 U	0.077 U	0.098 U

Notes:	ND = not detected
All Results Given as mg/kg	m = ms/msd recovery failure
Q = lack of QC information	U = not detected
J = Estimated	S = Screening data
s = surrogate failure	* Surrogate double spiked
UJ - detection limit inaccurate	D = diluted analysis

SOILS SAMPLES ANALYZED BY STONE ENVIRONMENTAL

SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

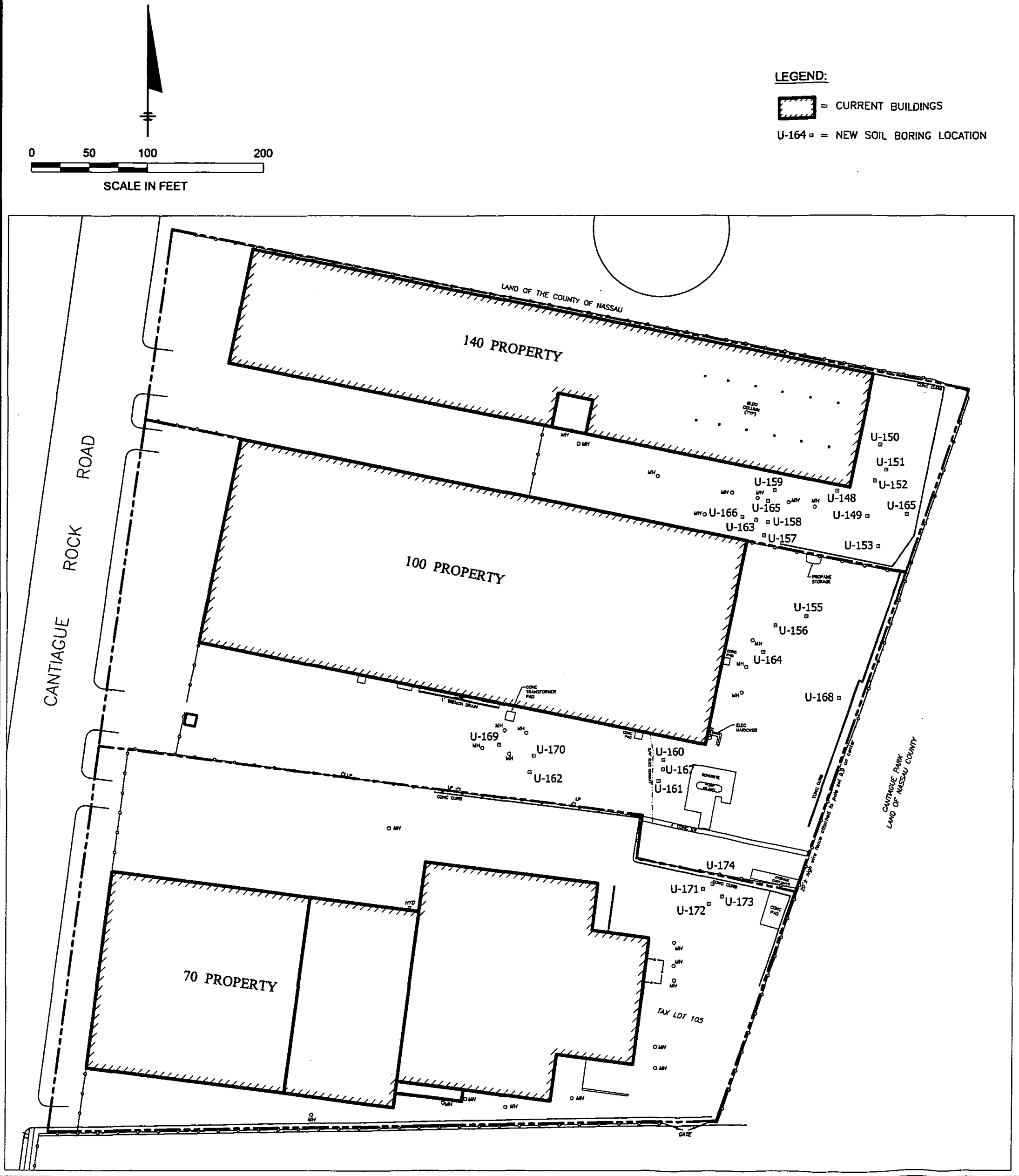
GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 3b
VOLATILE ORGANIC COMPOUND RESULTS

DATE:	JUNE 30, 2003
JOB NO.:	27010-039-007
DRAWN BY:	MAR
CHK'D BY:	CS
SCALE:	AS SHOWN

URS

1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115



Compound	U-148 (11.5-12)					U-149 (7-8)					U-149 (11.5-12)					U-150 (2-2.5)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.25	U	0.11	U	Q	0.51	U	0.27	U	Q	0.27	U	0.13	U	Q	0.41		0.31		
Protactinium 234M	4.9	U	3.6	U	Q	85		19			28.3		8.2			22		9.5		

Compound	U-150 (11-12)					U-151 (11.5-12)					U-152 (11-12)					U-153 (2-2.5)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.28	U	0.13	U	Q	0.31	U	0.15	U	Q	0.34	U	0.16	U	Q	4.8		1.4		
Protactinium 234M	12	U	5.8	U	Q	8	U	3.6	U	Q	14	U	6.5	U	Q	125		28		

Compound	U-153 (11.5-12)					U-154 (1.5-2)					U-154 (11-12)					U-155 (11.5-12)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.29	U	0.14	U	Q	0.66	U	0.35	U	Q	0.33	U	0.15	U	Q	0.37	U	0.23	U	Q
Protactinium 234M	10	U	4.5	U	Q	101		23			7.4	U	3.7	U	Q	7.2	U	3.5	U	Q

Compound	U-156 (11.5-12)					U-157 (2.5-3)					U-157 (11.5-12)					U-158 (2.5-3)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.35	U	0.17	U	Q	0.61		0.27			0.31	U	0.16	U	Q	1.07		0.47		
Protactinium 234M	9	U	4.8	U	Q	9.9	U	5	U	Q	8.2	U	4.2	U	Q	65		15		

Compound	U-158 (11.5-12)					U-159 (2-2.5)					U-159 (11.5-12)					U-160 (1.5-3)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.32	U	0.15	U	Q	1.17		0.55			0.25	U	0.11	U	Q	1.43		0.53		
Protactinium 234M	6.5	U	3.3	U	Q	14	U	6.8	U	Q	7.3	U	3.6	U	Q	39		12		

Compound	U-160 (11.5-12)					U-161 (1.5-2)					U-161 (11.5-12)					U-162 (2-3.5)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.61		0.31			2.26		0.73			0.41	U	0.23	U	Q	3.7		1.1		
Protactinium 234M	11	U	5.7	U	Q	60		14			12	U	5.3	U	Q	130		24		

Compound	U-162 (15.5-16)					U-163 (2.5-3)					U-163 (11.5-12)					U-164 (10.5-11)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.29	U	0.14	U	Q	1.01		0.4			0.27	U	0.13	U	Q	0.33	U	0.15	U	Q
Protactinium 234M	7.9	U	4.1	U	Q	54		13			6.3	U	2.9	U	Q	5.9	U	3.3	U	Q

Compound	U-165 (7.5-8)					U-166 (7.5-8)					U-167(2-2.5)					U-167(7.5-8)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	0.53	U	0.3	U	Q	0.32	U	0.15	U	Q	2.8		0.85			0.66		0.3		
Protactinium 234M	13	U	5.9	U	Q	8.5	U	4.3	U	Q	0.4	J	0.19			11	U	5.2	U	Q

Compound	U-170(10.5-11.5)					U-171(11.5-12)					U-172(2.5-3)					U-172(11.5-12)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD																				
Actinium 228	4.7		1.4			0.32	U	0.16	U	Q	0.8		0.38			0.28	U	0.14	U	Q
Protactinium 234M	459		63			7.1	U	3.2	U	Q	13	U	6.9	U	Q	6.3	U	3.3	U	Q

Compound	U-173(11.5-12)					U-174(11.5-12)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
GA-01-R MOD										
Actinium 228	0.36	U	0.18	U	Q	0.23	U	0.096	U	Q
Protactinium 234M	7.3	U	3.9	U	Q	6.9	U	3.2	U	Q

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

Compound	U-153 (2-2.5)					U-158 (2.5-3)					U-162 (2-3.5)					U-163 (2.5-3)				
	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N	Result		Uncertainty	FQ	N
3004/RP-725																				
Thorium 228	6.1		1.4			1.19		0.46			6.8		1.6			1.27		0.44		
Thorium 230	2.71		0.76			1.93		0.61			2.33		0.66			1.01		0.38	J	z
Thorium 232	7.5		1.7			1.22		0.45			6.6		1.5			0.89		0.35		
Uranium 234	135		27			85		17			248		49			95		19		
Uranium 235	8.2		2			4.8		1.3			10.8		2.6			4.2		1.2		
Uranium 238	131		26			78		15			237		47			91		18		

Notes:
Results are in pCi/g
U = not detected
J - estimated value
FQ - Final Qualifer
N - notes
Q - see validation report
z - blank contamination

SOILS SAMPLES ANALYZED BY SEVERN TRENT LABORATORY

SOURCE:
RICHARD RYBINSKI, NYS LICENSED SURVEYOR; JULY 2001
MAP BASE FROM O'BRIEN & GERE ENGINEERS, INC.;
FILE No. 5816.009.810, SEPTEMBER 2001.

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

FIGURE 4
GAMMA AND ALPHA SPECTROSCOPY RESULTS

DATE: JUNE 30, 2003
JOB NO.: 27010-039-007
DRAWN BY: MAR
CHK'D BY: CS
SCALE: AS SHOWN

URS
1701 GOLF ROAD, SUITE 1000
ROLLING MEADOWS, ILLINOIS 60008-4227
PHONE: 847.228.0707
FAX: 847.228.1115

APPENDICES

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-148

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	36	NA		*Sand (SM)* Asphalt overlying dark gray to dark brown fine sand, some silt, trace fine to coarse gravel with asphalt fragments, medium dense, dry to moist (Fill)	NM	1.9 3.5 2.5 3.5	
4-8	48	NA		*Sand (SM)* Light brown fine sand, trace fine to coarse gravel, trace silt, loose, dry to moist Grades to moist *Silt (ML)* Light brown silt, some fine sand, trace fine gravel, moist to wet	NM	2.0 6.4 6.9 1.6	Sample collected from 6.5-7 feet for VOC analysis
8-12	48	NA		*Sand* Light brown to reddish yellow fine to medium sand, trace to little fine to coarse gravel, loose, moist.	NM	3.4 3.9 1.4 1.2	Sample collected from 9-9.5 feet for VOC analysis Sample collected from 11.5-12 feet for radiological analysis

Borehole was completed at 12 feet on 04/10/03.
Groundwater was not encountered during drilling.
Boring backfilled with bentonite.

Depth scale: 1–25 feet.

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-149

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	36	NA		*Sand (SM)* Asphalt overlying dark gray to black fine to medium sand, little fine to coarse gravel, trace silt with asphalt fragments (Fill) *Sand (SW)* Brown fine to coarse sand, some fine to coarse gravel, rounded to subrounded, trace silt, loose, dry	NM	0.7 0.2 0.1 0.0	
4-8	48	NA		*Sand (SM)* Light brown fine sand, little fine to coarse gravel, loose, dry Grades to dark brown to dark gray Grades to light brown	NM	0.0 0.0 0.0 0.0	Sample collected from 7-8 feet for radiological analysis
8-12	48	NA		*Sand (SW)* Light brown fine to coarse sand and fine to coarse gravel, angular, rounded to subrounded, loose, moist	NM	0.0 0.0 0.0 0.0	Samples collected from 11-11.5 and 11.5-12 feet for VOC and radiological analyses, respectively
12-25				Borehole was completed at 12 feet on 04/10/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-150

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	32	NA		*Sand (SM)* Asphalt overlying dark gray fine to medium sand, trace silt and asphalt fragments, loose, dry (Fill) Grades to yellow	NM	26.8, 3.7, 1.4, 1.3	Sample collected from 2-2.5 feet for radiological analysis
				Sand (SM) Yellow fine sand, little fine to coarse gravel, subrounded to rounded, loose, dry.		1.2	Sample collected from 4-4.5 feet for VOC analysis
4–8	48	NA		Grades to dark yellow Grades to light yellow	NM	7.3, 3.2, 1.3, 1.2	
8–12	48	NA		Grades to light gray	NM	1.2, 0.9, 0.3, 0.1	Sample collected from 11-12 feet for radiological analysis
				Sand (SW) Yellow fine to coarse sand, some fine to coarse gravel, loose, dry			

Borehole was completed at 12 feet on 04/10/03.
Groundwater was not encountered during drilling.
Boring backfilled with bentonite.

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-151

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1				*Sand (SM)* Dark gray fine sand, some silt, trace fine gravel with slag fragments, medium dense, dry		2.8	Sample collected from 1.5-2.0 feet for VOC analysis
2	39	NA		*Sand (SM)* Light brown fine sand and silt, trace fine gravel, rounded to subrounded, medium dense, dry	NM	10.6	
3				(2-inch layer of dark gray silt at 4.5 feet)		4.1	
4				Grades to loose, dry		2.1	
5				*Sand (SM)* Light brown fine sand, some to little fine to coarse gravel, rounded to subrounded, loose, dry		2.0	
6	48	NA			NM	1.1	
7						0.3	
8				Grades to light brown to light gray, loose, moist		0.1	
9						0.2	
10	48	NA		Grades to dark brown to light reddish yellow	NM	0.3	
11						0.1	Sample collected from 11.5-12 feet for radiological analysis
12						0.0	
13				Borehole was completed at 12 feet on 04/10/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Logged by: LG

Project No: 27010-039-007

Project: Soil Borings April 2003

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 04/10/03

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-152

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	40	NA		*Sand (SM)* Asphalt overlying dark gray to black fine sand, some silt, little fine to coarse gravel with asphalt and slag fragments, medium dense, dry (Fill) *Silt (ML)* Dark brown to brown silt, trace fine sand, dense	NM	9.7, 1.3, 3.7, 2.1	Sample collected from 2-2.5 feet for VOC analysis
4–8	48	NA		*Sand (SM)* Light brown to brown fine to medium sand, little to some gravel, rounded and subrounded, loose, dry (1" layer of dark gray to black sand at 4.8 feet) Grades to light brown, loose, moist Grades to light brown to yellow fine sand	NM	1.2, 1.1, 2.0, 1.2	
8–12	48	NA		Grades to light brown to light gray *Sand (SW)* Brown to yellow fine to coarse sand, some fine to coarse gravel with pebbles, loose, moist	NM	0.3, 0.1, 0.0, 0.0	Sample collected from 11-12 feet for radiological analysis

Borehole was completed at 12 feet on 04/10/03.
Groundwater was not encountered during drilling.
Boring backfilled with bentonite.

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-153

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	36	NA		*Sand (SM)* Asphalt overlying dark gray to black fine to medium sand with asphalt fragments, some fine to coarse gravel, trace silt (Fill) *Sand (SM)* Dark gray to dark brown fine sand and silt, trace fine to coarse gravel	NM	7.3 0.8 0.4 0.9	Sample collected from 2-2.5 feet for radiological analysis
4-8	48	NA		*Silt (ML)* Dark yellow to light brown silt, some fine sand, trace fine gravel, moist. *Sand (SM)* Brown to dark gray fine to medium sand, little fine to coarse gravel, subrounded to rounded, loose, dry	NM	0.7 0.3 0.1 0.1	
8-12	48	NA		Grades to yellow Grades to light brown with trace silt	NM	0.9 2.4 1.0 0.0	Sample collected from 9.5-10 feet for VOC analysis Sample collected from 11.5-12 feet for radiological analysis
12-25				Borehole was completed at 12 feet on 04/10/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-154

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	38	NA		*Sand (SM)* Asphalt overlying dark gray to black fine sand, some silt, trace fine gravel with asphalt and slag fragments, dry (Fill)	NM	3.3, 2.3	Samples collected from 1.5-2 feet for VOC and radiological analysis
				Sand (SM) Brown to light brown silt, little fine sand, trace fine and coarse gravel.		1.0, 0.0	
4-8	48	NA		*Silt (SW)* Light brown fine to coarse sand, some to little fine to coarse gravel, rounded and subrounded, loose, moist	NM	0.0, 0.0	
				Sand (SM) Light gray to light yellow fine sand, some to little fine to coarse gravel, rounded and subrounded, loose, moist		0.0, 0.0	
8-12	48	NA		(1-inch of dark gray fine sand at 10 feet) Grades to brown to reddish yellow	NM	0.1, 0.2, 0.0, 0.0	Sample collected from 11-12 feet for radiological analysis
12-25				Borehole was completed at 12 feet on 04/10/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-155

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	35	NA		*Sand (SM)* Asphalt overlying dark gray to black fine sand, trace fine to coarse gravel with slag and asphalt fragments (Fill) *Sand (SM)* Dark brown to dark gray fine to medium sand, little silt, trace fine to coarse gravel, loose, moist	NM	1.0, 0.1, 0.0, 0.5	
4–8	48	NA		Grades to light brown fine sand, little to some fine to coarse gravel, rounded and subrounded, loose, moist	NM	0.3, 0.5, 0.7, 0.1	
8–12	48	NA		(6-inch layer of dark gray fine sand at 10 feet) Grades to light gray fine sand, some to little fine to coarse gravel, trace silt, moist to wet	NM	0.2, 0.7, 1.9, 1.2	Sample collected from 10.5-11 feet for VOC analysis. Sample collected from 11.5-12 feet for radiological analysis
12–25				Borehole was completed at 12 feet on 04/10/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-156

1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
1, 2, 3, 4	43	NA		*Sand (SM)* Asphalt overlying dark gray fine sand, trace fine to coarse gravel, trace silt with asphalt fragments (Fill) *Sand (SM)* Dark brown fine sand, trace silt *Silt (SM)* Dark gray to black silt, trace fine sand and gravel, dense, moist	NM	1.1 0.3 0.1 0.5	
5, 6, 7, 8	48	NA		Grades to brown *Sand (SM)* Light brown fine to medium sand, little to some fine to coarse sand and gravel, rounded and subrounded, loose, moist	NM	0.2 0.5 4.7 1.0	
9, 10, 11, 12	48	NA		Light gray to light brown fine to medium sand, some fine to medium gravel, loose, moist Grades to brown to reddish yellow	NM	4.3 5.2 3.1 1.7 0.6	Sample collected from 9-9.5 feet for VOC analysis Sample collected from 11.5-12 feet for radiological analysis
13–25				Borehole was completed at 12 feet on 04/10/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-157

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	30	NA		*Sand (SM)* Asphalt overlying dark gray to dark brown fine sand, little silt, trace fine to coarse gravel, loose, dry (Fill)	NM	0.3, 0.0	Sample collected from 2.5-3 feet for radiological analysis
				Sand (SM) Dark brown fine sand, some silt, trace fine gravel, medium dense, moist		0.0, 0.0	
4–8	48	NA		*Silt (SM/ML)* Brown to yellow fine sand and silt, medium dense, moist	NM	0.0, 0.0	
				Sand (SM) Light brown to yellow fine sand, some to little fine to coarse gravel, angular to rounded, loose, moist		0.0, 0.0	
8–12	48	NA		Grades to light brown, little fine to coarse gravel	NM	0.7, 1.4, 1.0, 0.0	Sample collected from 9.5-10 feet for VOC analysis; Sample collected from 11.5-12 feet for radiological analysis

Borehole was completed at 12 feet on 04/10/03.
Groundwater was not encountered during drilling.
Boring backfilled with bentonite.

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-158

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	38	NA	SM	*Sand (SM)* Asphalt overlying dark gray to dark brown fine sand, some to little fine to coarse gravel, trace silt, medium dense, dry (Fill)	NM	0.2 0.0 0.0 0.4	Sample collected from 2.5-3 feet for radiological analysis
4–8	48	NA	SM	(0–6 ft: as above) *Sand (SM)* Light brown fine to medium sand, some to little fine to coarse gravel, angular to rounded, trace silt, loose, moist	NM	0.3 0.0 0.0 0.1	
8–12	48	NA	SM	Grades to dark gray fine sand, medium dense, moist Grades to brown and yellow fine sand, loose, moist	NM	1.6 0.6 0.0 0.0	Sample collected from 8.5-9 feet for VOC analysis Sample collected from 11.5-12 feet for radiological analysis
12–25				Borehole was completed at 12 feet on 04/10/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/10/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-159

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	45	NA		*Sand (SM)* Asphalt overlying dark gray to dark brown fine sand, trace fine to coarse gravel, little silt, dry (Fill) *Silt (ML)* Brown to dark brown silt, trace fine sand, medium dense, moist	NM	1.2 1.5 0.8 0.0	Samples collected from 1.5-2 feet for VOC analysis Sample collected from 2-2.5 feet for radiological analysis
4-8	48	NA		*Sand (SM)* Light brown to light yellow fine sand, little fine to coarse gravel (some silt between 4 - 4.5 feet) Grades to yellow to light brown fine sand, little fine to coarse gravel, loose, dry	NM	0.0 0.5 0.8 0.0	
8-12	48	NA		Grades to gray to light yellow fine sand, trace silt, trace fine to coarse gravel, loose, dry Grades to light brown to reddish yellow, loose, moist	NM	0.0 0.0 0.0 0.0	Sample collected from 11.5-12 feet for radiological analysis
12-25				Borehole was completed at 12 feet on 04/10/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/11/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-160

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	42	NA	SM	*Sand (SM)* Dark brown to black fine to medium sand, little silt, trace fine to coarse gravel with asphalt and concrete fragments, moist (Fill)	NM	2.3, 8.9, 19, 1.7	Samples collected from 1.5-3 and 2.5-3 feet for radiological and VOC analyses, respectively
4-8	48	NA	ML / SM	*Silt (ML)* Dark gray to dark brown silt, some clay, trace fine sand, medium dense, moist to wet. *Sand (SM)* Light brown fine sand, little to some fine to coarse gravel, rounded and angular, trace silt with pebbles, loose, dry	NM	4.0, 3.1, 3.0, 0.7	
8-12	48	NA	SM	(6-inch layer of dark gray fine sand at 9 feet) Grades to reddish brown to brown fine sand, loose, moist. Grades to light brown to yellow	NM	3.5, 5.1, 6.3, 11.2	Samples collected from 11.5-12 feet for radiological and VOC analyses

Borehole was completed at 12 feet on 04/11/03.
Groundwater was not encountered during drilling.
Boring backfilled with bentonite.

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/11/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-161

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	40	NA		*Sand (SM)* Asphalt overlying dark brown to dark gray fine sand, some to little fine to coarse gravel, rounded to subrounded and angular, trace silt, dry (Fill) Grades to dark gray	NM	10.3 63.1 37.3 75.0	Sample collected from 1.5-2 feet for radiological analysis Sample collected from 3.5-4 feet for VOC analysis
4–8	48	NA		*Sand (SM)* Light brown to brown fine sand, little fine to coarse gravel, rounded to subrounded, trace silt, moist	NM	10.4 8.0 3.1 1.1	
8–12	48	NA		Grades to dark gray fine to medium sand (12-inch layer of reddish brown silt at 10 feet) Grades to reddish brown to brown fine to medium sand, little fine to coarse gravel, loose, dry	NM	4.1 6.9 7.0 6.1	Sample collected from 11.5-12 feet for radiological analysis
12				Borehole was completed at 12 feet on 04/11/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Depth scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/11/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-162

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	36	NA		*Sand (SM)* Asphalt overlying dark gray to black fine sand, little silt, trace fine to coarse gravel with asphalt and slag fragments (Fill) Grades to dark gray to dark brown fine sand, little fine to coarse gravel with pebbles and brick fragments, loose, moist	NM	6.9 2.4 2.9 0.7	Samples collected from 2-3.5 and 2.5-3 feet for radiological and VOC analyses
4–8	48	NA		*Sand (SM)* Reddish brown fine to medium sand, little fine to coarse gravel with pebbles and brick fragments, loose, moist Grades to yellow to light brown fine sand	NM	1.3 1.7 0.3 0.5	
8–12	48	NA		Grades to brown to reddish brown fine to medium sand, little fine to coarse gravel, rounded to angular, trace silt, loose, moist Grades to yellow to light brown fine sand, trace silt, loose, moist	NM	0.3 0.4 0.2 0.7	
12–16	48	NA		*Sand (SW)* Brown to reddish brown fine to coarse sand, little fine to coarse gravel , angular to round, trace silt, loose, moist Grade to light brown with pebbles	NM	1.2 0.3 0.1 0.0	Sample collected from 15.5-16 feet for radiological analysis
16–25				Borehole was completed at 16 feet on 04/11/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/11/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-163

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	40	NA	SM	*Sand (SM)* Asphalt overlying dark gray to dark brown fine to medium sand, little silt, little fine to coarse gravel with asphalt and concrete fragments and pebbles, dry to moist (Fill)	NM	5.6, 0.0, 0.0, 0.0	Sample collected from 2.5-3 feet for radiological analysis
			ML	*Silt (ML)* Brown clayey silt, trace fine sand, medium dense, moist			
4-8	48	NA	SM	*Sand (SM)* Light brown to yellow fine to medium sand, little fine to coarse gravel, angular, subangular and rounded, trace silt, loose, moist Grades to fine sand, trace fine gravel	NM	0.0, 0.0, 0.0, 0.0	
8-12	48	NA	SM	Reddish brown to brown fine sand, little to trace fine to coarse gravel and pebbles, trace silt, loose, moist	NM	0.0, 1.0, 0.0, 0.0	Sample collected from 9-9.5 feet for VOC analysis Sample collected from 11.5-12 feet for radiological analysis

Borehole was completed at 12 feet on 04/11/03.
Groundwater was not encountered during drilling.
Boring backfilled with bentonite.

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/11/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-164

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	43	NA	SM	*Sand (SM)* Dark gray to dark brown fine sand, little fine to coarse gravel, trace silt with asphalt and concrete fragments, dry (Fill)	NM	5.4 0.0 0.3 0.0	
			SM	*Sand (SM)* Light brown to yellow fine sand, little fine gravel, trace silt, dry Grades to dark gray			Sample collected from 4.5-5 feet for VOC analysis
4-8	48	NA	ML	*Silt (ML)* Brown silt, trace fine sand, moist	NM	6.1 1.3 0.3 0.1	
			SM	*Sand (SM)* Light brown to yellow fine sand, trace to little fine to coarse gravel, rounded to angular, trace silt, loose, moist			
8-12	48	NA	SM	Grades to gray Grades to reddish brown to brown	NM	0.0 0.0 0.0 0.0	Sample collected from 10.5-11 feet for radiological analysis

Borehole was completed at 12 feet on 04/11/03.
Groundwater was not encountered during drilling.
Boring backfilled with bentonite.

Logged by: LG

Project No: 27010-039-007

Project: Soil Borings April 2003

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 04/11/03

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-165

URS

1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	24	NA	SM	*Sand (SM)* Dark gray to brown and black fine to medium sand with asphalt and concrete, little to trace fine to coarse gravel, trace silt, loose, dry (Fill) Grades to moist	NM	0.0 0.0 0.0 0.0	Poor recovery
4–8	18	NA	SM	*Sand (SM)* Dark brown fine sand, trace fine to coarse gravel , trace silt, loose, moist Grades to dark brown to dark yellow	NM	0.0 0.0 0.0 0.0	Poor recovery Samples collected from 7.5-8 feet for VOC and radiological analyses
8–25				Borehole was completed at 8 feet on 04/11/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/11/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-166

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–2.5	36	NA	SM	*Sand (SM)* Dark gray and brown to black fine to medium sand, trace fine to medium gravel, trace silt with asphalt, loose, moist	NM	0.0, 0.0, 0.0	
2.5–4			ML	*Silt (ML)* Light brown silt and silty sand, trace fine gravel, dense, moist		0.0	
4–8	48	NA	SM	*Sand (SM)* Dark brown to dark gray fine to medium sand, little to trace fine to coarse gravel, rounded to angular, trace silt, loose, moist Grades to brown to yellow	NM	0.0, 0.0, 0.0, 0.0	Samples collected from 7.5-8 feet for VOC and radiological analyses

Borehole was completed at 8 feet on 04/11/03.
Groundwater was not encountered during drilling.
Boring backfilled with bentonite.

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/12/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-167

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	36	NA		*Sand (SM/SP)* Dark gray to dark brown fine to medium sand, some to little fine to coarse gravel, trace silt with asphalt and concrete fragments, dry (Fill)	NM	10; 31.2; 73; 114	Sample collected from 2-2.5 feet for radiological analyses. Sample collected from 3-3.5 feet for VOC analysis
4–8	44	NA		*Sand (SM)* Brown to yellow fine to medium sand, trace fine to coarse gravel, rounded and subrounded, trace silt with pebbles, loose, moist. Grades to reddish brown to brown	NM	37; 35; 10; 10.5	Sample collected from 7.5-8 feet for radiological analysis
8–				*Silt (ML)* Light brown silt, trace fine sand, trace fine gravel, dense, moist			

Borehole was completed at 12 feet on 04/12/03.
Groundwater was not encountered during drilling.
Boring backfilled with bentonite.

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/12/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-168

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-14							Discrete samples were not collected between 0-14 feet.
14-18	40		SM	*Sand (SM)* Brown to yellow fine to medium sand, little fine to coarse gravel, rounded and subrounded, trace silt, loose, moist. Grades to fine sand, trace fine to coarse gravel	NM	906 748 985 706	Sample collected from 16.5-17 feet for VOC analysis
18-25				Borehole was completed at 18 feet on 04/12/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/12/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-169

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–12							Discrete samples were not collected between 0-12 feet.
12–16	44			*Sand (SM)* Light brown to yellow fine to medium sand, little fine to coarse gravel, rounded and subrounded, trace silt, loose, moist	NM	0.6 0.0 0.0 0.0	Sample collected from 12.5.-13 feet for VOC analysis Sample collected from 14-15.5 feet for total and TCLP Ni
16–25				Borehole was completed at 16 feet on 04/12/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/12/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-170

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-8							Discrete samples were not collected between 0-8 feet.
8-12	28			*Gravel (GW)* Dark gray to black fine to coarse gravel, trace fine to coarse sand, trace silt, loose, moist to wet	NM	36.3 87.5 104 204	Sample collected from 11-11.5 for total and TCLP Ni analyses Sample collected from 10.5-11.5 feet for radiological analysis on 06-05-03
12-25				Borehole was completed at 12 feet on 04/12/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/12/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-171

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	40	NA		*Sand (SM)* Asphalt overlying dark gray to dark brown fine sand, little fine to coarse gravel, trace silt with asphalt, slag, concrete and brick fragments, dry (Fill) *Sand (SM)* Brown to yellow fine sand, little to trace fine to coarse gravel, rounded to angular, trace silt, slightly moist	NM	1.0 0.0 0.0 0.0	
4-8	48	NA		Grades to dark brown silty sand Grades to brown yellow fine sand (6-inch layer of brown to yellow silt at 7.5 feet)	NM	0.9 0.0 0.0 0.0	Sample collected from 4.5-5 feet for VOC analysis
8-12	48	NA		Grades to reddish brown fine to medium sand, loose, moist	NM	0.0 0.0 0.0 0.0	Sample collected from 11.5-12 feet for radiological analysis
12-25				Borehole was completed at 12 feet on 04/12/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/12/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-172

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	42	NA		*Sand (SM)* Asphalt overlying dark gray to dark brown fine sand, little fine to coarse gravel, angular, and subangular, trace silt with asphalt, concrete and brick fragments, dry (Fill) Grades to dark gray silty sand, trace fine gravel, medium dense, dry	NM	0.0 0.0 0.0 1.2	Sample collected from 2.5-3 feet for radiological analysis Sample collected from 3.5-4 feet for VOC analysis
4–8	48	NA		*Sand (SM)* Light brown to yellow fine sand, trace gravel, little fine to coarse gravel, trace silt, loose, moist (6-inch layer of light brown silt at 7.5 feet)	NM	0.0 0.0 0.0 0.0	
8–12	46	NA		*Sand (SW)* Brown to reddish brown fine to coarse sand, little to some fine to coarse gravel, rounded and angular, loose, moist	NM	0.0 0.0 0.0 0.0	Sample collected from 11.5-12 feet for radiological analysis
12–25				Borehole was completed at 12 feet on 04/12/03. Groundwater was not encountered during drilling. Boring backfilled with bentonite.			

Logged by: LG

Project No: 27010-039-007
Project: Soil Borings April 2003
Client: GTEOSI
Location: Hicksville, NY
Date Drilled: 04/12/03
Sampler Type: Geoprobe Macrosampler

Log of Boring: U-173

URS
1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0-4	44	NA	SM	*Sand (SM)* Asphalt overlying dark gray to dark brown fine sand, little silt, trace fine to coarse gravel with asphalt fragments, dry (Fill)	NM	0.0, 0.0, 0.0, 0.0	
			ML	*Silt (ML)* Brown to dark yellow silt, trace fine sand, dense, moist			
4-8	48	NA	SM	*Sand (SM)* Light brown fine sand, little to trace fine to coarse gravel	NM	0.0, 0.0, 0.0, 0.0	
			ML	*Silt (ML)* Light brown to brown sandy silt, trace fine gravel, moist to wet			Sample collected from 8.5 - 9 feet for VOC analysis
8-12	48	NA	SW	*Sand (SW)* Brown to reddish brown fine to coarse sand, little to trace fine to coarse gravel, rounded to angular, loose, moist	NM	1.6, 1.6, 0.0, 0.0	Sample collected from 11.5 - 12 feet for radiological analysis

Borehole was completed at 12 feet on 04/12/03.
Groundwater was encountered during drilling at 8 feet.
Boring backfilled with bentonite.

Logged by: LG

Project No: 27010-039-007

Project: Soil Borings April 2003

Client: GTEOSI

Location: Hicksville, NY

Date Drilled: 04/12/03

Sampler Type: Geoprobe Macrosampler

Log of Boring: U-174

URS

1701 Golf Road, Suite 1000
Rolling Meadows, IL 60008

Depth (feet)	Recovery (inches)	Blows/Foot	USCS Symbol	Description	Headspace (ppm)	PID sample screen (ppm)	Remarks
0–4	36	NA		***Sand (SM)*** Asphalt overlying dark gray to dark brown fine sand, little silt, trace fine to coarse gravel with asphalt fragments and plastic foam(Fill)	NM	0.0 0.0 0.0 0.0	
4–8	44	NA		***Sand (SM)*** Light brown to yellow fine to medium sand, little to trace fine to coarse gravel, angular to rounded, trace silt, loose, moist	NM	0.0 0.0 0.0 0.0	
8–12	44	NA		***Silt (ML)*** Light brown to brown sandy silt, trace fine gravel, moist to wet ***Sand (SM)*** Brown to reddish brown fine to coarse sand, little to trace fine to coarse gravel, angular to rounded, loose, moist	NM	0.0 0.0 0.0 0.0	Sample collected from 9 - 9.5 feet for VOC analysis Sample collected from 11.5 - 12 feet for radiological analysis
12–25				Borehole was completed at 12 feet on 04/12/03. Groundwater was encountered at 8.2 feet during drilling. Boring backfilled with bentonite.			

Logged by: LG

Data Usability Summary Reports

Soil Data Validation (Radiological)
Former Sylvania Electric Products Incorporated Facility
July 29, 2003

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List of Tables

Executive Summary

This report addresses data quality for soil samples collected at the Former Sylvania Electric Products Incorporated Facility in Hicksville, New York (the Site). Samples were collected by URS Corporation (URS) from April 10, 2003 through April 12, 2003.

The soil samples collected were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for both chemical and radiochemistry analyses. The radiochemistry analysis, included herein, was conducted via gamma spectrometry with select samples also being analyzed via alpha spectrometry for isotopic thorium and isotopic uranium. Samples were analyzed using United States Department of Energy (USDOE) Methods and laboratory standard operating procedures (SOP). The analytical data generated for this investigation were evaluated by URS using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the Science Applications International Corporation (SAIC) *Laboratory Data Validation Guidelines For Evaluating Radionuclide Analyses*, 143-ARCS-00.08, Revision 06, June 2000 and USDOE *Guidance For Radiochemical Data Validation*, Draft RD4, October 4, 1995.

Several negative results were reported by the laboratory. This may be due to background subtraction or negative slopes in the regions of interest. Positive results less than the MDA were also reported with "U" flag by the laboratory. Since any results (including negative results) less than the MDA had less than 95% confidence of positive detection, these results were qualified as non-detect ("U, Q") at the MDA.

Other method non-conformances requiring data validation qualification (J) include: blank contamination and laboratory duplicate imprecision. None of these non-conformances were significant enough to jeopardize the usability of the data.

Overall, 100 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J) due to data validation QA/QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for certain of the soil samples collected at the Former Sylvania Electric Products Incorporated Facility in Hicksville, New York (the Site). Sample collection activities addressed in this Report were conducted by URS Corporation (URS) from April 10, 2003 through April 12, 2003. The quantity and types of samples that were submitted for data validation are presented in Table 1-1.

Table 1-1: *Sample Cross-Reference List*

Package Identification	Client ID	Laboratory ID	Analysis Requested
F3D140106	U-148 (11.5-12.0)	F3D140106012	Gamma Spectrometry
	U-149 (11.5-12)	F3D140106025	Gamma Spectrometry
	U-149 (7.0-8.0)	F3D140106024	Gamma Spectrometry
	U-150 (11.0-12)	F3D140106021	Gamma Spectrometry
	U-150 (2.0-2.5)	F3D140106020	Gamma Spectrometry
	U-151 (11.5-12)	F3D140106026	Gamma Spectrometry
	U-152 (11.5-12)	F3D140106027	Gamma Spectrometry
	U-153 (11.5-12)	F3D140106023	Gamma Spectrometry
	U-153 (2.0-2.5)	F3D140106022	Alpha and Gamma Spectrometry
	U-154 (1.5-2.0)	F3D140106028	Gamma Spectrometry
	U-154 (11.0-12)	F3D140106029	Gamma Spectrometry
	U-155 (11.5-12)	F3D140106030	Gamma Spectrometry
	U-156 (11.5-12.0)	F3D140106009	Gamma Spectrometry
	U-157 (11.5-12)	F3D140106014	Gamma Spectrometry
	U-157 (2.5-3.0)	F3D140106013	Gamma Spectrometry
	U-158 (11.5-12.0)	F3D140106011	Gamma Spectrometry
	U-158 (2.5-3.0)	F3D140106010	Alpha and Gamma Spectrometry
	U-159 (11.5-12)	F3D140106016	Gamma Spectrometry
	U-159 (2.0-2.5)	F3D140106015	Gamma Spectrometry
	U-160 (1.5-3.0)	F3D140106019	Gamma Spectrometry
	U-160 (11.5-12')	F3D140106001	Gamma Spectrometry
	U-161 (1.5-2.0')	F3D140106002	Gamma Spectrometry
	U-161 (11.5-12.0')	F3D140106003	Gamma Spectrometry

Table 1-1: Sample Cross-Reference List

Package Identification	Client ID	Laboratory ID	Analysis Requested
F3D140106	U-162 (15.5-16)	F3D140106018	Gamma Spectrometry
	U-162 (2.0-3.5)	F3D140106017	Alpha and Gamma Spectrometry
	U-163 (11.5-12)	F3D140106005	Gamma Spectrometry
	U-163 (2.5-3.0)	F3D140106004	Alpha and Gamma Spectrometry
	U-164 (10.5-11)	F3D140106006	Gamma Spectrometry
	U-165 (7.5-8)	F3D140106007	Gamma Spectrometry
	U-166 (7.5-8)	F3D140106008	Gamma Spectrometry
F3D150259	U-167(2.0-2.5)	F3D150259002	Gamma Spectrometry
	U-167(7.5-8.0)	F3D150259003	Gamma Spectrometry
	U-170(10.5-11.5)	F3D150259001	Gamma Spectrometry
	U-171(11.5-12)	F3D150259004	Gamma Spectrometry
	U-172(11.5-12)	F3D150259006	Gamma Spectrometry
	U-172(2.5-3.0)	F3D150259005	Gamma Spectrometry
	U-173(11.5-12)	F3D150259007	Gamma Spectrometry
	U-174(11.5-12)	F3D150259008	Gamma Spectrometry

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report outlines deviations from the applicable QC criteria outlined in the following documents:

- GTE Operations Support Incorporated. (GTEOSI). 2002. *Soil Remediation Program Work Plan (QAPP: Appendix H), Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1,* Revision 2, October 2002.

- United States Department of Energy (USDOE). 1997. *Environmental Measurements Laboratory (EML) Procedures Manual, 28th Edition, Volume 1.* New York, New York.

Deviations from the QA/QC criteria were qualified based on guidance provided in the following documents:

- Science Applications International Corporation (SAIC). 2000. *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyses*, 143-ARCS-00.08, Revision 06. Oak Ridge, Tennessee.

- USDOE. 1995. *Guidance for Radiochemical Data Validation*, Draft RD4. Gaithersburg, Maryland.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for radiochemistry analyses including gamma spectrometry and alpha spectrometry (thorium-228, thorium-230, thorium-232, uranium-234, uranium-235, and uranium-238) using USDOE Methods and laboratory standard operating procedures (SOP). The methods used in this investigation are presented in Table 1-2.

Table 1-2. *Analytical Method References*

Parameter	***Method***	***Reference***
Gamma Spectrometry	Ga-01-R Modified	1
Alpha Spectrometry (Thorium-228, -230, -232 and Uranium-234, -235, -238)	RP-725 and Laboratory SOPs STL-RD-0201, STL-RD-0203, and STL-RC-0240	2, 3, 4, 5

Notes:
1. United States Department of Energy (USDOE). 1997. *Environmental Measurements Laboratory (EML) Procedures Manual (HASL-300),* 28th Edition, Volume 1. New York, New York.
2. USDOE. 1994. *Group Actinide Screening Using Extraction Chromatography (Eichrom),* Draft RP725, Pacific Northwest Laboratory, Richland, Washington.
3. STL. 2002. *Daily Operations of an Alpha Spectroscopy System.* STL-RD-0201, Revision No. 3.
4. STL. 2001. *Calibration and Maintenance of an Alpha Spectroscopy System.* STL-RD-0203, Revision No. 1.
5. STL. 2002. *Isotopic Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EiChromM® Separation Resins.* STL-RC-0240, Revision No. 2.

The following sections of this document address distinct aspects of the validation process.

Section 2 lists the data QA/QC protocols used to validate the sample data.

Section 3 discusses specific QA/QC deviations and qualifications performed on the sample data.

Section 4 provides data completeness and usability information.

Section 5 presents the Data Usability Summary Report (DUSR) Summary Information.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (GTEOSI 2002), the analytical methodology, and the data validation guidelines referenced in Section 1 herein.

The following QA/QC parameters were evaluated for the radiochemistry (gamma spectrometry, alpha spectrometry) analyses (where applicable):

- Holding times and sample preservation;
- Calibration;
- Blank analysis;
- Tracer recovery (alpha spectrometry);
- Laboratory control sample (LCS);
- Laboratory duplicate analysis;
- Field duplicate analysis;
- Radionuclide quantitation and detection evaluation;
- Chemical separation specificity (alpha spectrometry);
- Target radionuclide list identification (gamma spectrometry);
- Tentatively identified radionuclides (gamma spectrometry);
- System performance; and
- Documentation completeness.

2.2. Data Validation Qualifiers

The following guidelines are used regarding the assignment of qualifiers and the use of qualified data:

- QA/QC exceedances which do not result in the qualification of an analyte, or which result in additional qualification of the analyte with the same qualifier, are discussed.

- The use of estimated analytical data for quantitative uses is consistent with the guidance presented in the *USEPA Risk Assessment Guidance for Superfund* (USEPA 1992).

The following qualifiers have been used in this data validation.

"J" The associated numerical value is an estimated quantity, due to a QC or statistical exceedance.

"UJ" The associated non-detect value is an estimated quantity, due to a QC or statistical exceedance.

2.3. Data Usability Summary Report Questions

The DUSR indicates whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

Most of the reported sample-specific MDAs were greater than the MDA (0.2 pCi/g) specified in the project QAPP. This is due to the sample size used being less than the theoretical amount of 500 grams, samples being analyzed at dilutions due to high levels of target radionuclides, or that the instrument runs at 30 minutes per sample and the overall number of counts of the sample is not enough to obtain the specified 0.2 pCi/g MDA. No corrective action is taken, but the data user should be made aware that the overall sensitivity of the data may be decreased.

3.2.4. Field Duplicate Analysis

It should be noted that QAPP requirements (GTEOSI 2002) specified that a field duplicate sample be collected at a rate of one sample for every twenty samples (collection rate of 5%). However, field duplicate samples were not collected and were not submitted to STL for alpha spectrometry analysis. No action was taken due to the number of laboratory duplicates analyzed.

3.3. Alpha Spectrometry Analyses

The QA/QC parameters presented in Section 2.1 for radiochemistry were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Holding times and sample preservation;
- Calibration;
- Tracer recovery (alpha spectrometry);
- LCS;
- Duplicate analysis;
- Chemical separation specificity;
- System performance; and
- Documentation completeness.

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.3.1. Blank Analysis

The blank results were evaluated using the following statistical approach: if the sample result ± uncertainty was less than five times the associated blank result ± uncertainty, the qualifier "J, p" was applied to the associated sample result. The method blanks displayed positive detections for thorium-230 at 0.23 pCi/g, thorium-232 at 0.019 pCi/g, and uranium-234 at 0.05 pCi/g. The thorium-230 in sample U-163 (2.5-3.0) was flagged "J, p". Since all other associated sample results were either non-detect or greater than five times the amount detected in the blank, no data qualifying action was required. The statistical evaluation of the blank results is summarized in Table 3-2.

Table 3-2. *Blank Evaluation for Thorium/Uranium Analyses.*

Blank ID	***Radionuclide***	***Blank Concentration ± Uncertainty (pCi/g)***	***Affected Samples***	***Action***
F3D230000-135B	Thorium 230	0.23 ± 0.089	U-163 (2.5-3.0)	J, p

Notes:
pCi/g indicates picocuries per gram.
Uncertainty indicates total propagated uncertainty, which includes counting error and non-counting error.

3.3.2. Field Duplicate Analysis

It should be noted that QAPP requirements (GTEOSI 2002) specified that a field duplicate sample be collected at a rate of one sample for every twenty samples (collection rate of 5%). However, field duplicate samples were not collected for alpha spectrometry analysis. Several laboratory duplicates were analyzed. These duplicates were used to fulfill the field duplicate requirement set forth in the QAPP. No validation action was taken.

3.3.3. Radionuclide Quantitation and Detection Limits

Most of the reported MDAs in each sample were greater than the MDA (0.4 pCi/g) specified in the project QAPP. This is due to the sample size used being less than the theoretical amount of 1 gram, samples being analyzed at dilutions due to high levels of target radionuclides, or that the instrument is dependant on the tracer recovery. No corrective action is taken, but the data user should be made aware that the overall sensitivity of the data may be decreased.

4. Summary and Data Usability

This section summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J) due to data validation QA/QC exceedances should be considered conditionally usable.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. There were no major anomalies reported from this data set. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters.

Precision is measured through the evaluation of laboratory duplicate samples. For the radiochemistry analyses, none of the data were rejected due to precision non-conformances.

LCS recoveries indicate the accuracy of the data. For the radiochemistry analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. None of the radiochemistry data were rejected due to representativeness non-conformances.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. Sensitivity requirements were not met for the sample data in this project. Several alpha and gamma spectrometry analyses for target nuclides were performed using reduced sample sizes, due to the presence of high levels of target radionuclides. This resulted in elevated MDAs. None of the radiochemistry data were rejected due to the sensitivity non-conformances.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. Have all holding times been met?

The holding times were met for all samples for the radiochemistry analyses.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. No major non-conformances were identified for the radiochemistry data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USDOE methods be used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for gamma analyses, which met data user and client needs. The laboratory used their own SOPs for alpha spectrometry analyses, which are equivalent to the USDOE methods, but with some minor modifications. The modifications are not considered significant enough to jeopardize the usability of the data.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The evaluation of selected raw data confirmed information provided in the data packages.

6. Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines as listed in Section 1.

References

GTE Operations Support Incorporated (GTEOSI). 2002. *Soil Remediation Program Work Plan (QAPP: Appendix H), Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1,* Revision 2, October 2002.

Science Applications International Corporation (SAIC). 1992. *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyzes*, 143-ARCS-00.08, Revision 06. Oak Ridge, Tennessee.

United States Department of Energy (USDOE).1997. *Environmental Measurements Laboratory (EML) Procedures Manual,* 28th Edition, Volume 1. New York, New York.

United States Department of Energy (USDOE) 1995. *Guidance for Radiochemical Data Validation*, Draft RD4, Gaithersburg, Maryland.

United States Environmental Protection Agency (USEPA). 1992. USEPA Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), 540/1-891002. Washington D.C.

Soil Data Validation (Metals)
Former Sylvania Electric Products Incorporated Facility
July 29, 2003

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List of Tables

Executive Summary

This report addresses data quality for soils samples collected at the Former Sylvania Electric Products Incorporated Facility (the Site) in Hicksville, New York. Sample collection activities were conducted by URS Corporation (URS) from April 10, 2003 through April 12, 2003.

The soil samples collected were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for both chemical and radiochemistry analyses. The chemical (metals) analysis, included herein, was conducted using United States Environmental Protection Agency (USEPA) guidance methods. The analytical data generated for this investigation were evaluated by URS Corporation (URS) using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance and the Site-specific Quality Assurance Project Plan (QAPP). References are as follows:

- GTE Operation Support Incorporated. 2002. *Soil Remediation Program Work Plan, Former Sylvania Electric Products Facility, Revision 2 (QAPP– Appendix H)*, October 2002.

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;

- *CLP National Functional Guidelines for Inorganic Data Review*, USEPA, EPA 540-R-01-008, July 2002;

- *United States Environmental Protection Agency Region II Evaluation of Metals Data for the CLP 3/90*, USEPA 1992, and

- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000).

One continuing calibration blank (CCB) contained nickel at 11.8 µg/L. Qualification of associated results was not necessary as the concentration in the method blank was significantly below the concentrations in the soil samples.

The MS/MSD pair displayed percent recoveries for nickel less than the lower control limit (i.e., 75%). Since the amount found in the parent sample was greater than four times the amount used in the spike, no data qualifying action was required.

Overall, 100 percent of the metals data were determined to be usable for qualitative and quantitative purposes. Therefore, the completeness objective of 90 percent, as stated in the QAPP, was met for the metals database.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for soil samples collected at the Site in Hicksville, New York. Sample collection activities were conducted by URS Corporation (URS) from April 10, 2003 through April 12, 2003.

The sample delivery group (package identification), field identification, laboratory identification and analyses requested were submitted for data validation and are presented in Table 1-1.

Table 1-1: *Sample Cross-Reference List*

Package Identification	Client ID	Laboratory ID	Analysis Requested
F3D150128	U-170 (11.0-11.5)	F3D150128-002	Nickel & TCLP Nickel
	U-169 (14.5-15.0)	F3D150128-003	Nickel & TCLP Nickel

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report summarizes the findings of the review and outlines any deviations from the applicable QC criteria outlined in the following documents:

- GTE Operations Support Incorporated 2002. *Soil Remediation Program Work Plan, (QAPP–Appendix H)*, Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1, Revision 2, October 2002;

- O'Brien & Gere Engineers, Inc. 2000. *Supplement to the Approved Work Plan (QAPP – Appendix C), Former Sylvania Electric Products Incorporated Facility, Cantiague Rock Road, Hicksville, New York.* Syracuse, New York;

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;

- *United States Environmental Protection Agency Region II Evaluation of Metals Data for the CLP 3/90*, USEPA 1992;

- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000); and

- *CLP National Functional Guidelines for Inorganic Data Review*, EPA 540-R-01-008, July 2002.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for metals analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW846 Method 3050B - Microwave Acid Digestion;
- SW846 Method 1311 TCLP Extraction Procedure; and
- SW846 Method 6010B - Inductively Coupled Plasma (ICP) Spectrometry.

The laboratory assigned a sample delivery group (SDG) number to a group of samples during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and controls QC analyses. Only one SDG composed the soils samples. The SDG number, field identification and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process.

Section 2 lists the data QA/QC protocols used to validate the sample data.

Section 3 discusses a summary of the findings associated with the validation and the specific QA/QC deviations and qualifications performed on the sample data.

Section 4 provides data completeness and usability information.

Section 5 presents the Data Usability Summary Report (DUSR) Summary Information.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (GTEOSI 2002), the analytical methodology, and the data validation guidelines referenced in Section 1.

URS performed a data review of all analytical results to assess data quality. A data review includes an assessment of sample handling protocols, supporting laboratory quality control (QC) parameters, and field QC. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements;
- Analytical methods performed and test method references;
- Sample condition - review of log-in records for cooler temperature, presence of headspace, chemical preservation, etc.;
- Holding times (comparison of collection, preparation, and analysis dates);
- Analytical results (units, values, significant figures, reporting limits, analyst, percent moisture);
- Sample traceability and comparison to raw data;
- Initial calibration – comparison to laboratory criteria;
- Continuing calibration – comparison to laboratory criteria;
- Laboratory control sample (LCS) results and comparison to laboratory control limits;
- Interference Check Samples (ICS)/Contract Required Detection Limits (CRDL);
- Analyte quantitation, reporting limits and dilutions; and
- Electronic Data Deliverables (EDDs) – comparison to the hardcopy analytical report (a 20% check of the data to confirm that the results in the hardcopy report matched the results in the electronic file).

The analytical reports were reviewed for completeness and the accompanying QC data were reviewed for acceptable performance. In case documentation was incomplete, the laboratory was required to provide the missing information. When QC results indicated poor performance, URS applied data qualifiers to the results to inform the data user of the possible performance problem. These qualifiers are in addition to or a revision of the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Validation Qualifiers

The following qualifiers have been used by the laboratory for the metals analyses:

"U" Non-detect result at the established laboratory reporting limit (adjusted for percent moisture, if applicable).

"B" Indicates an estimated value or a value below the established reporting limit but above the method detection limit. Note: All "B" qualifiers for the metals analyses were generally revised to "J" to provide consistency between the organics and inorganics databases.

"N" Indicates a result associated with an MS/MSD percent recovery that exceeds laboratory control limits.

"*" Indicates a result associated with an MS/MSD relative percent difference (RPD) that exceeds laboratory control limits.

Laboratory qualifiers defined above remain in the original electronic database. For the final database summary, the qualifiers have been revised or removed during the data validation process to simplify the presentation of the usability of the data. The revised qualifiers may be one of the following:

"U" The chemical was not detected. Value shown is the reporting limit.

"J" Estimated concentration because the result was below the sample reporting limit or quality control criteria were not met.

"UJ" The chemical was not detected at or above the sample reporting limit. However, the reporting limit is approximate and may or may not represent the actual limit of reporting necessary to accurately and precisely measure the chemical in the sample.

The laboratory qualifiers were revised by URS during the data review process to simplify the presentation of data in the final report per the USEPA Region 2 Guidance (USEPA 1992). Generally, all codes used by the laboratory to indicate results associated with quality control/performance problems were replaced in the electronic database with a "J" qualifier. The "J" qualifier indicates estimated data.

2.3. Data Usability Summary Report Questions

The DUSR indicates whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data: blanks, calibration standards, calibration verifications, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes the findings from the review of the QA/QC parameters specified in Section 2.1, validation criteria, and which QA/QC parameters did not meet validation criteria. A summary of the individual components of the review are described in the following sections.

3.2. Total and TCLP Nickel Analysis

The QA/QC parameters presented in Section 2.1 were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements;
- Analytical methods performed and test method references;
- Sample condition - review of log-in records for cooler temperature, presence of headspace, chemical preservation, etc.;
- Holding times (comparison of collection, preparation, and analysis dates);
- Analytical results (units, values, significant figures, reporting limits, analyst, percent moisture);
- Sample traceability and comparison to raw data;
- Initial calibration – comparison to laboratory criteria;
- Continuing calibration – comparison to laboratory criteria;
- LCS results and comparison to laboratory control limits;
- ICS/ CRDL;
- Analyte quantitation, reporting limits and dilutions; and
- EDDs – comparison to the hardcopy analytical report (a 20% check of the data to confirm that the results in the hardcopy report matched the results in the electronic file).

3.2.1. Initial and Continuing Calibration Blanks

One continuing calibration blank (CCB) contained nickel at 11.8 µg/L. Qualification of associated results was not necessary as the concentration in the method blank was significantly below the concentrations in the soil samples.

3.2.2. Matrix Spike/Matrix Spike Duplicate Analyses

The MS/MSD pair displayed percent recoveries for nickel less than the lower control limit (i.e., 75%). Since the amount found in the parent sample was greater than four times the amount used in the spike, no data qualifying action was required.

3.2.3. Field Duplicate Analyses

It should be noted that QAPP requirements (GTEOSI 2002) specified that a field duplicate sample be collected at a rate of one sample for every twenty samples (collection rate of 5%). However, since only two nickel samples were collected, field duplicate samples were not collected and were not submitted to STL for nickel analysis.

3.2.14. Equipment Blanks

No equipment blanks were submitted for the soils sampling project. No qualification of data is required due to the lack of equipment blank sample results.

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the metals data were determined to be usable for qualitative and quantitative purposes.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, sensitivity, accuracy, representativeness, comparability, and completeness (PSARCC) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. Since only two nickel samples were collected, field duplicate samples were not collected and laboratory duplicate analysis was not performed for nickel. As a result, precision cannot be assessed for nickel analysis.

LCS recoveries indicate the accuracy of the data. For the metals analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte quantification are indicators of the representativeness of the analytical data. None of the metals data were rejected due to representativeness non-conformances.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of elements that can be determined with a designated level of confidence. None of the metals data were rejected due to sensitivity non-conformance.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets Site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

   The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. Have all holding times been met?

   The holding times were met for all the metal analyses.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

   The laboratory used the laboratory control limits during the analyses performed for this sampling event. QA/QC deviations and qualifications performed on the sample data are discussed in Chapter 3. Major non-conformances were not detected for the metals data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

   The QAPP required that USEPA guidance methods be used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols for the analyses performed for this sampling event, which met data user and client needs.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

   The evaluation of selected raw data confirmed all information provided in the data packages.

6. Have the correct data qualifiers been used?

   The laboratory applied the correct qualifiers to the sample data. The laboratory qualifiers were revised and/or applied as required by validation guidelines listed in Section 1.

References

GTE Operation Support Incorporated. 2002. *Soil Remediation Program Work Plan, Revision 2 (QAPP–Appendix H), Former Sylvania Electric Products Facility, Hicksville, New York, Site Number V 00089-1,* Revision 2, October 2002.

O'Brien & Gere Engineers, Inc. 2000. *Supplement to the Approved Work Plan (QAPP – Appendix C), Former Sylvania Electric Products Incorporated Facility Cantiague Rock Road, Hicksville, New York.* Syracuse, New York.

United States Environmental Protection Agency (USEPA). 1992. *USEPA Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A),* 540/1-891002. Washington, D.C.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW846) USEPA, Final Update IIIA, April 1998.

CLP National Functional Guidelines for Inorganic Data Review, EPA 540-R-01-008, July 2002

United States Environmental Protection Agency Region II Evaluation of Metals Data for the CLP [Contract Laboratory Program] 3/90, USEPA 1992.

Analytical Services Protocol (ASP), New York State Department of Environmental Conservation (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000).

Soil Data Validation (Volatiles)
Former Sylvania Electric Products
July 29, 2003

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Executive Summary

This report addresses data quality for soil samples collected at the Former Sylvania Electric Products Incorporated Facility (the Site) in Hicksville, New York. Sample collection activities were conducted by URS Corporation (URS) from April 10, 2003 through April 12, 2003.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for volatile organic compound (VOC) analyses using United States Environmental Protection Agency (USEPA) guidance methods. The analytical data generated for this investigation were evaluated by URS using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance and the Site-specific Quality Assurance Project Plan (QAPP). Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- *Soil Remediation Program Work Plan, Revision 2 (QAPP– Appendix H)*, GTE Operations Support Incorporated. October 2002;

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;

- *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008, October 1999;

- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and

- *United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review*, SOP No. HW-6, Revision #11 (USEPA 1996a)

Professional judgment was used to qualify results as estimated ("J" or "UJ") in some cases where the overall quality of data was suspect due to commonly accepted or standardized practices employed by the laboratory. Since the guidance documents used as reference for the validation somewhat differ in the type of qualification applied to data, URS applied qualifiers generally as a conservative approach. Method non-conformances included exceedances of the relative percent standard deviation for the initial calibrations, the percent differences of the continuing calibrations, the percent recoveries of the system monitoring compounds, the internal standard values, and matrix spike/matrix spike duplicate percent recoveries. Affected data, however, were not rejected if other supporting quality control data indicated acceptable quality control results.

Additionally, most laboratory method blanks contained low level contamination from recurring laboratory contaminants such as acetone, toluene, and methylene chloride. The presence of these contaminants affected many project samples and qualification of associated results was performed to show the relationship between the laboratory contamination and the uncertainty of the actual project sample result. Similarly, the project trip blanks and field blanks contained low-levels of some of the same contaminants as were seen in the laboratory method blanks. Again, URS qualified the affected data to show the potential impact on the final sample results.

Other quality issues requiring data validation qualification included removal of results from the database that exceeded the laboratory calibration range (i.e., qualified with an "E" by the laboratory), and qualification of all tentatively identified compounds (TICs) as estimated. Results from these data sets are qualitative only, and not considered usable for quantitative assessments, in particular, risk screening evaluations.

None of the exceedances of method non-conformances were significant enough to jeopardize the usability of the data. The analytical results (with the exception of TIC results) are usable based on the findings listed in this Data Usability Summary Report (DUSR).

Overall, 100 percent of the VOC data retained in the database as final data was determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J or UJ) due to data validation QA/QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the QAPP, was met.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for soil samples collected at the Site in Hicksville, New York. Sample collection activities were conducted by URS from April 10, 2003 through April 12, 2003. The sample delivery group (SDG) or laboratory package number, field identification, and laboratory identification of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1: Sample Cross-Reference List

Package Identification	Client ID	Laboratory ID	Analysis Requested
F3D120127	U-148 (9-9.5)	F3D120127-001	VOCS & DCBs
	U-150 (4-4.5)	F3D120127-002	VOCS & DCBs
	TB041103	F3D120127-003	VOCS & DCBs
F3D150128	U-168 (16.5-17)	F3D150128-001	VOCs, DCBs, & TCLP VOCs
	U-167 (3-3.5)	F3D150128-004	VOCs, DCBs, & TCLP VOCs

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report summarizes the findings of the review and outlines any deviations from the applicable quality control (QC) criteria outlined in the following documents:

- GTE Operations Support Incorporated. 2002. *Soil Remediation Program Work Plan, Revision 2 (QAPP– Appendix H)*, October 2002;
- O'Brien & Gere Engineers, Inc. 2000. *Supplement to the Approved Work Plan (QAPP – Appendix C), Former Sylvania Electric Products Incorporated Facility, Cantiague Rock Road, Hicksville, New York.* Syracuse, New York;
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;
- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000);
- *United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review*, SOP No. HW-6, Revision #11 (USEPA 1996a); and
- *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008, October 1999.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for volatile organic compound (VOC) analyses and toxicity characteristic leaching procedure (TCLP) VOC analyses. The laboratory used the following United States Environmental Protection Agency (USEPA) guidance methods for the analyses:

- SW846 Method 5030B Purge/Trap Analysis;
- SW846 Method 1311 TCLP Extraction Procedure; and
- SW846 Method 8260B Gas Chromatography/Mass Spectrometry.

The laboratory assigned a SDG number to a group of samples during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and controls QC analyses. A total of two SDGs contained two or more soil samples submitted for analysis. The SDG, field identification and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process.

Section 2 lists the data QA/QC protocols used to validate the sample data.

Section 3 discusses a summary of the findings associated with the validation and the specific QA/QC deviations and qualifications performed on the sample data.

Section 4 provides data completeness and usability information.

Section 5 presents the Data Usability Summary Report (DUSR) Summary Information.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the Quality Assurance Project Plan (QAPP) (GTEOSI 2002), the analytical methodology, and the data validation guidelines referenced in Section 1.

URS performed a data review of all analytical results to assess data quality. A data review includes an assessment of sample handling protocols, supporting laboratory QC parameters, and field QC. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements;
- Analytical methods performed and test method references;
- Sample condition - review of log-in records for cooler temperature, presence of headspace, chemical preservation, etc.;
- Holding times (comparison of collection, preparation, and analysis dates);
- Analytical results (units, values, significant figures, reporting limits, analyst, percent moisture);
- Sample traceability and comparison to raw data;
- Instrument tuning;
- Initial calibration – comparison to laboratory criteria;
- Continuing calibration – comparison to laboratory criteria;
- Method blank results and laboratory contamination;
- Laboratory control sample (LCS) results and comparison to laboratory control limits;
- Matrix spike/matrix spike duplicate (MS/MSD) results and comparison to laboratory control limits;
- Field replicate/duplicate results and comparison to data review criteria;
- System Monitoring Compounds and comparison to laboratory control limits;
- Internal Standards and comparison to lab criteria;
- Tentatively Identified Compounds (TICs);
- Field QC sample (e.g., trip blanks, equipment blanks, etc.);
- Reporting limits and Dilutions; and
- Electronic Data Deliverables (EDDs) – comparison to the hardcopy analytical report (a 20% check of the data to confirm that the results in the hardcopy report matched the results in the electronic file).

The analytical reports were reviewed for completeness and the accompanying QC data were reviewed for acceptable performance. If documentation was incomplete, the laboratory was required to provide the missing information. When QC results indicated poor performance, URS applied data qualifiers to the results to inform the data user of the possible performance problem. These qualifiers are in addition to or a revision of the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory:

"U" Non-detect result at the established laboratory-reporting limit (adjusted for percent moisture, if applicable).

"B" Associated with a result if the compound was identified in the corresponding method blank.

"J" Indicates an estimated value or a value below the established reporting limit but above the method detection limit.

"E" This flag identifies compounds whose concentrations exceed the calibration range of the instrument for the specific analysis; data qualified with an "E" are qualitative only and not useable for quantitative purposes. All results qualified with an "E" were required to be re-analyzed using an applicable dilution and re-reported.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

"R" The datum is unusable due to serious quality control failures.

"U" The chemical was not detected. Value shown is the reporting limit. or The datum should be considered a non-detect at the value reported due to blank contamination.

"J" Estimated concentration because the result was below the sample reporting limit or quality control criteria were not met.

"UJ" The chemical was not detected at or above the sample-reporting limit. However, the reporting limit is approximate and may or may not represent the actual limit of reporting necessary to accurately and precisely measure the chemical in the sample.

"NJ" The compound is "tentatively identified" and the associated numerical value represents its approximate concentration.

2.3. Data Usability Summary Report Questions

The DUSR indicates whether or not the data meets site-specific criteria for data quality and use. Data quality was determined by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

3. Data Quality Evaluation

3.1. Summary

This section summarizes which QA/QC parameters specified in Section 2.1 met validation criteria and which QA/QC parameters did not meet validation criteria. Samples requiring qualification are described in the following sections, and are identified by the description documented on the sample chain-of-custody records.

3.2. Volatile Organic Compound Analyses

The QA/QC parameters presented in Section 2.1 were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements;
- Analytical methods performed and test method references;
- Holding times (comparison of collection, preparation, and analysis dates);
- Analytical results (units, values, significant figures, reporting limits, analyst, percent moisture);
- Sample traceability and comparison to raw data;
- Instrument tuning;
- Internal Standards and comparison to lab criteria; and
- EDDs – comparison to the hardcopy analytical report (a 20% check of the data to confirm that the results in the hardcopy report matched the results in the electronic file).

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.2.1. Sample Condition

The trip blank sample vial (TB041103) contained air bubbles greater than 6 millimeters (mm). All associated non-detect results were flagged "R, p" and all positive results were flagged "J, p"; unless those flagged due to method blank, calibration, or laboratory control sample anomalies.

3.2.2. Initial Calibration – Reason Code "r" or "c"

The initial calibrations (ICALs) met data validation criteria (i.e., relative response factors (RRFs) were greater than method criteria for the System Performance Check Compounds (SPCCs), and the relative percent standard deviations (%RSDs) were less than 15% for Calibration Check Compounds (CCCs)). Additionally, for all target compounds, method requirements recommend that RRFs be greater than 0.05 and that compounds be quantitated using the average relative response factor (avgRRF) only if the %RSD is less than 15%. The guidance method recommends that all compounds with a %RSD greater than 15% be quantitated with a calibration curve rather than the avgRRF. The laboratory does not prepare a calibration curve for compounds with a %RSD greater than 15% as recommended within the guidance method. Rather, the laboratory uses an alternate approach to the ICAL evaluation by evaluating the avgRRF (for all compounds calibrated). If their avgRRF is less than 15% (across all compounds) then the laboratory considers this to mean that they have met method criteria for the ICAL. Although method criteria were met, a conservative approach was used for the validation process and all results were qualified as estimated ("J" or "UJ") that were associated with the laboratory ICALs which had a %RSD greater than 15%. It should be noted that results (both detected and non-detected) are potentially biased due to this calibration routine. However, no %RSD values were greater than 50%. Values greater than

50% have the potential to cause significant bias to the data set. Since the %RSD values were outside criteria, but not excessive, the data were qualified as estimated. Table 3-1 shows the samples and compounds qualified as estimated. The final validation qualifier is shown in Table 7 of this Soils Report for each of the compounds listed in Table 3-1.

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Sample ID****	***Compounds***	***Action***
F3D120127	TB041103	<u>%RSD:</u> Bromomethane (32.0%), Methylene Chloride (20.7%), and acetone (25.0%). ICAL date: 1/15/03	<u>%RSD >15%</u> These results were flagged due to method blank contamination or calibration failures. No further data qualifying action was taken.
F3D120127 & F3D150128	U-148 (9-9.5), U-150 (4-4.5), and U-168 (16.5-17)	<u>%RSD:</u> Vinyl chloride (15.5%), Acetone (36.4%), Methylene Chloride (28.8%), 2-butanone (31.6%), and 4-Methyl-2-pentanone (15.9%). ICAL date: 4/11/03	<u>%RSD >15%</u> UJ, r – non-detect results J, r – positive results above the laboratory reporting limit Except those flagged due to method blank contamination.
F3D150128	U-167 (3-3.5),	<u>%RSD:</u> Chloromethane (19.4%), Acetone (39.7%), Methylene Chloride (15.6%), and 2-butanone (23.5%). ICAL date: 4/16/03	<u>%RSD >15%</u> UJ, r – non-detect results J, r – positive results above the laboratory reporting limit
F3D120127	TB041103	<u>AvgRRF:</u> Acetone (0.0346), Bromomethane (0.04698), and 2-butanone (0.04055). ICAL date: 1/15/03	<u>avgRRF >0.05</u> R, c – non-detect results J, c – positive results above the laboratory reporting limit Except those flagged due to method blank contamination.

<u>3.2.3. Continuing Calibration – Reason Code "c"</u>

The continuing calibration (CCAL) verification analyses were performed with a 'mid-level standard immediately following the tuning check at the beginning of each 12-hour analytical sequence. The CCAL verification analyses met data validation criteria (i.e., RRFs were <0.05 for the SPCCs, and the percent differences (%Ds) from the avgRRF were < 20% for the CCCs) for all analytical QC batches. For the target compounds, the %Ds were greater than 20% for multiple compounds. Although method criteria were met, as a conservative approach the results associated with a CCAL with an RRF less than 0.05 or an analyte exceeded 20%D were qualified as unusable ("R") or estimated ("J" or "UJ"). The results for Table 3-2 show a summary of the samples and qualified parameters.

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***Sample ID****	***Compounds***	***Action***
F3D120127	TB041103	RRF: Acetone (0.024) and 2-butanone (0.034). CCAL date: 4/14/03	RRF < 0.05 R, c – all non-detect results J, c – all positive results above the laboratory reporting limit.
F3D150128	U-168 (16.5-17) U-167 (3-3.5)DL	RRF: Acetone (0.042) %D: Acetone (22.2%) CCAL date: 4/16/03 0952	RRF< 0.05 and %D > 20% R, c – all non-detect results Since the acetone result in sample U-167 (3-3.5)DL was not used for data interpretation, no data qualifying action was taken.
F3D120127	TB041103	%D: Methylene chloride (21.0%), Acetone (29.4%), 4-Methyl-2-pentanone (23.5%), 2-Hexanone (21.1%), 1,1,2,2-Tetrachloroethane (34.4%), Bromomethane* (-38.3%), 1,1,1-Trichloroethane* (-21.2%), Carbon tetrachloride* (-23.0%)	%D > 20% J, c – all positive results above the laboratory reporting limit Non-detect results were flagged due to other QC failures, no further data qualifying action was taken.

Notes:
*For bromomethane, 1,1,1-trichloroethane, and carbon tetrachloride, since these results displayed positive bias, indicating an increase in the instrument sensitivity and the associated field sample results were non-detect, no data qualifying action was necessary.

3.2.4. Laboratory Method Blanks – Reason Code "z"

Nearly all laboratory method blanks contained trace levels of one of more of the laboratory contaminants including 1,3-dichlorobenzene, 1,4-dichlorobenzene, acetone, bromomethane, methylene chloride, 2-butanone, and toluene. The corresponding project sample results for the identified contaminants were revised to non-detect results ("U, z" flag) if the associated sample results were less than five times the method blank results for laboratory contaminants in accordance with the QAPP (GTEOSI 2002). Results below the laboratory reporting limit (qualified with a "JB") were revised to the practical quantitation limit (PQL) and qualified as non-detect ("U, z"). Results above the laboratory reporting limit (qualified with a "B") were revised to non-detect at the reported concentration. Nearly all project samples contained one or more of the laboratory method blank contaminants and thus were affected by this qualification practice. A summary of the samples and compounds that were revised for the VOCs is presented in Table 3-3. (Note: Project sample results that were not revised due to laboratory method blank contamination are not shown in this table.)

Table 3-3. *Evaluation of Laboratory Method Blank Results*			
Blank Batch Number	***Client ID***	***Compounds***	***Action***
F3D120127 3105152 Analysis date: 4/14/03	U-148 (9-9.5) U-150 (4-4.5)	Acetone (6.2 µg/kg)	"U, z" to indicate non-detect result
		1,3-Dichlorobenzene (0.28 µg/kg) 1,4-Dichlorobenzene (0.39 µg/kg) Methylene chloride (1.9 µg/kg)	"U, z" at the reporting limit to indicate non-detect result
F3D120127 3105160 Analysis date: 4/14/03	TB041103	Acetone (1.8 µg/L)	"U, z" to indicate non-detect result
F3D150128 3106363 Analysis date: 4/16/03	U-167 (3-3.5)	Methylene chloride (2.0 µg/kg) and Acetone (8.0 µg/kg)	"U, z" to indicate non-detect result
	U-167 (3-3.5)	Bromomethane (1.8 µg/kg)	"U, z" at the reporting limit to indicate non-detect result
	U-167 (3-3.5)	Toluene (0.27 µg/kg) and 2-Butanone (2.9 µg/kg)	Not detected in the associated samples. No data qualifying action was taken.
F3D150128 3107167 (medium level) Analysis date: 4/16/03	U-168 (16.5-17)	Methylene chloride (250 µg/kg)	Revise "JB" qualifier to "U, z" to indicate non-detect result
F3D150128 3107167 (medium level) Analysis date: 4/16/03	U-167 (3-3.5)REA	Methylene Chloride	Methylene chloride was not used for data interpretation. No data qualifying action was taken.

3.2.5. Laboratory Control Sample Results – Reason Code "l"

The percent recoveries were within laboratory control limits for almost all QC batches. Where recoveries exceeded laboratory control limits, the associated data were qualified as estimated ("J, l" or "R, l") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results were qualified as estimated; non-detects were not qualified; 2) if the percent recovery was below the lower control limit, positive results were qualified as estimated ("J, l") and non-detect results were rejected ("R, l"). When a LCS duplicate was performed an evaluation of the precision of the laboratory analysis procedure was made based on the relative percent difference (RPD) calculated for the original and duplicate results. When the RPDs exceeded the laboratory control limits (20%) the associated results were qualified as estimated ("J" or "UJ"). Table 3-4 shows the samples that were qualified as estimated due to LCS percent recoveries exceeding laboratory control limits.

Table 3-4. *Evaluation of Laboratory Control Sample Results*			
Package Identification	***Client ID***	***Compound***	***Action***
F3D120127	TB041103	1,2-Dichloropropane (78%) 1,1,2,2-Tetrachloroethane (61%)	"R, l" (low %R)

3.2.6. Matrix spike/matrix spike duplicate (MS/MSD) results – Reason Code "m"

Two separate MS/MSD pairs were analyzed on non-project related samples in SDG F3D120127 and displayed recovery anomalies. Since the parent samples were from non-project related samples, these anomalies were not used to assess the project soil samples. All MS/MSD recoveries and RPDs were in control in the U-148 (9-9.5) MS/MSD pair.

3.2.7. Field Duplicate Analyses – Reason Code "f"

It should be noted that QAPP requirements (GTEOSI 2002) specified that a field duplicate sample be collected at a rate of one sample for every twenty samples (collection rate of 5%). Since 100% of the samples were submitted in duplicate to the on-Site laboratory, field duplicate samples were not collected for submittal to STL for VOCs analysis.

3.2.8. Trip Blanks and Equipment Blanks – Reason Code "y" or "x"

Since one cooler containing the VOC samples was shipped to STL, one trip blank was submitted for this soil sampling event. This trip blank contained trace amount of acetone at 4.1 µg/L, methylene chloride at 0.74 µg/L, toluene at 0.46 µg/L, and isobutanol (a tentatively identified compound) at 6.6 µg/L. Since the acetone result in this trip blank was previously flagged due to method blank contamination and all methylene chloride results in the associated samples were previously flagged due to method blank contamination, no further data qualifying action was taken. All positive toluene results in the associated samples were flagged "U, y" at the reporting limit. Since the isobutanol was not detected in the associated soil samples, no data qualifying action was required. No equipment blank was submitted in accordance with the requirements of the QAPP (GTEOSI 2002). A summary of the samples and compounds that were revised for the VOCs is presented in Table 3-4. (Note: Project sample results that were not revised due to laboratory method blank contamination are not shown in this table.)

Table 3-4. *Evaluation of Trip Blank and Equipment Blanks Results*

Package Identification	***Client ID***	***Compounds***	***Action***
F3D120127	U-148 (9-9.5) U-150 (4-4.5)	Toluene	"U, y" at the reporting limit to indicate non-detect result

3.2.9. System Monitoring Compounds – Reason Code "s"

The percent recoveries for the VOC surrogates were within laboratory control limits for most project samples. The method blank analyzed on 4/17/03 displayed a surrogate percent recovery less than the lower control limit (i.e., 85%) for toluene-d8 at 81%. Since this is a QC sample and surrogate recoveries in the associated samples were in control, no data qualifying action was taken. Sample U-168 (16.5-17) was analyzed at a 200x dilution and the surrogates were not recovered. Because the sample was analyzed at a dilution greater than 10X, no data qualifying action was required.

3.2.10. Compound Identification and Quantitation of Results – Reason Code "q"

The laboratory's evaluations of the gas chromatographs and mass spectra for the identified compounds were acceptable for all project samples.

Many of the samples had detection limits slightly above the data quality objectives (DQOs) due to the correction for percent moisture. Some of the samples were initially analyzed at dilutions or using medium-level extractions, due to screening information. The affected sample U-168 (16.5-17) had detection limits above the DQOs. Additionally, many project samples contained elevated concentrations of some target compounds that exceeded the calibration range for the VOC analysis. The laboratory reported and qualified these results with an "E" qualifier. These results were flagged as estimate ("J, q") by the reviewer and should not be used for data interpretation. As part of the laboratory's corrective action, the affected samples were reanalyzed using a medium-level extraction to obtain usable results within the established calibration curve range. These results from dilution analysis should be used for data interpretation. The data user should be aware of the presence of these two chemicals in the subject samples. A list of the re-analyzed samples and the affected parameters are listed in Table 3-5.

Table 3-5: *Summary of Laboratory Re-Analyses*

Package Identification	***Client ID***	***Laboratory ID***	***Compound Reported From Re-Analysis***
F3D150128	U-167 (3-3.5)	F3D150128-004REA	cis-1,2-Dichloroethene

3.2.11. Tentatively Identified Compounds – Reason Code "t"

The laboratory was required to perform a library search for TICs present in the sample and QC matrices for the VOC analyses. The trip blank displayed a TIC identified as isobutanol. This TIC was flagged "NJ, t". Since this TIC was not detected in the associated soil samples, no data qualifying action was required.

3.3. TCLP Volatile Organic Compound Analyses

The QA/QC parameters presented in Section 2.1 were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements;
- Analytical methods performed and test method references;
- Sample condition - review of log-in records for cooler temperature, presence of headspace, chemical preservation, etc.;
- Holding times (comparison of collection, preparation, and analysis dates);
- Analytical results (units, values, significant figures, reporting limits, analyst, percent moisture);
- Sample traceability and comparison to raw data;
- Instrument tuning;
- Continuing calibration – comparison to laboratory criteria;
- Method blank results and laboratory contamination;
- MS/MSD results and comparison to laboratory control limits;
- System Monitoring Compounds and comparison to laboratory control limits;
- Internal Standards and comparison to lab criteria;
- Reporting limits and Dilutions; and
- EDDs – comparison to the hardcopy analytical report (a 20% check of the data to confirm that the results in the hardcopy report matched the results in the electronic file).

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.3.1. Initial Calibration – Reason Code "r" or "c"

The initial calibration analyzed on 4/17/03 displayed %RSDs greater than the control limit for bromomethane at 27.2%, acetone at 40.1%, methylene chloride at 18.5%, 2-butanone at 24.9%, trans-1,3-dichloropropane at 19.5%, dibromochloromethane at 18.5%, and bromoform at 20.0%. Since this initial calibration was only referenced for the dilution analysis of U-168 (16.5-17) for tetrachloroethene, no data qualifying action was taken.

3.3.2. Laboratory Control Sample Results – Reason Code "l"

The LCS analyzed on 4/18/03 displayed a percent recovery less than the lower control limit (i.e., 70%) for tetrachloroethene at 58%. The positive tetrachloroethene result in sample U-168 (16.5-17) REA was flagged "J, l".

3.3.3. System Monitoring Compounds – Reason Code "s"

The method blank and LCS analyzed on 4/18/03 displayed surrogate percent recoveries greater than the upper control limit (i.e., 117%) for 4-bromofluorobenzene at 126% and 118%, respectively. The LCS analyzed on 4/18/03 displayed a surrogate percent recovery less than the lower control limit (i.e., 85%) for toluene-d8 at 83%. Since these are QC samples and all surrogate recoveries in soil samples were in control, no data qualifying action was taken.

3.3.4. Compound Identification and Quantitation of Results – Reason Code "q"

The tetrachloroethene result in sample U-168 (16.5-17) exceeded the calibration range. This sample result was flagged "J, q" and should not be used for data interpretation. This sample was re-analyzed at a dilution and the tetrachloroethene result was within calibration range. It is recommended that the diluted tetrachloroethene result be used for data interpretation.

4. Summary and Data Usability

This section summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the VOC and TCLP VOC data in soil samples were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to data validation QA/QC exceedances should be considered conditionally usable. The trip blank sample vial (TB041103) contained air bubbles greater than 6 mm. All non-detect results in this trip blank were rejected "R, p"; unless those flagged due to method blank, calibration, or laboratory control sample anomalies. Since the trip blank is a QC sample, there is no impact on soil data quality.

The samples collected from the Site were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration or detection limit of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. For the VOC and TCLP VOC analyses, no field duplicate samples were analyzed by STL therefore field precision cannot be assessed.

LCS recoveries indicate the accuracy of the data. For the VOC analyses, none of the data in soil samples were rejected due to accuracy non-conformances. The LCS analyzed on 4/14/03 1038 displayed a percent recovery less than the lower control limit (i.e., 80%) for 1,2-dichloropropane at 78% and a percent recovery less than the lower control limit (i.e., 74%) for 1,1,2,2-tetrachloroethane at 61%. These two results in associated trip blank were rejected. Since trip blank is a QC sample, no impact on soil data quality.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. None of the VOC data in the soil samples were rejected due to representativeness non-conformances. The trip blank sample vial (TB041103) contained air bubbles greater than 6mm. All non-detect results in this trip blank were rejected "R, p"; unless those flagged due to method blank, calibration, or laboratory control sample anomalies. Since the trip blank is a QC sample, there is no impact on soil data quality.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. Sensitivity requirements were not met for several project samples due to the necessity of analyzing samples using significant dilutions. However, none of the VOC data were rejected due to sensitivity non-conformances.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets Site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. Have all holding times been met?

The holding times were met for the majority of VOC analyses.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

The laboratory used the laboratory control limits during the analyses performed for this sampling event. QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Major non-conformances were not detected for the VOC data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USEPA guidance methods be used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for the analyses performed for this sampling event, which met data user and client needs.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The evaluation of selected raw data confirmed the information provided in the data package.

6. Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines listed in Section 1.

References

GTE Operations Support Incorporated. 2002. *Soil Remediation Program Work Plan, Revision 2 (QAPP–Appendix H)*, October 2002

O'Brien & Gere Engineers, Inc. 2000. *Supplement to the Approved Work Plan (QAPP – Appendix C), Former Sylvania Electric Products Incorporated Facility Cantiague Rock Road, Hicksville, New York.* Syracuse, New York.

United States Environmental Protection Agency (USEPA). 1992. *USEPA Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)*, 540/1-891002. Washington D.C.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW846) USEPA, Final Update IIIA, April 1998;

USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, EPA 540-R-99-008, October 1999;

Analytical Services Protocol (ASP), New York State Department of Environmental Conservation (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and

United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review, SOP No. HW-6, Revision #11 (USEPA 1996a)

GTE Operations Support Incorporated
Basking Ridge, New Jersey

Former Sylvania Electric Products Incorporated Facility Hicksville, NY Voluntary Cleanup Program Site No. V00089-1

Data Report P102, P104, P110, P112, P113, and P114

January 2008

Report Prepared By:

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201.797.7400

4563001

MALCOLM PIRNIE

LEGEND

PROFILE LOCATION - DATA INCLUDED IN PREVIOUS DATA SUBMITTAL

PROFILE LOCATION

MONITORING WELL LOCATION

SCALE IN FEET

0 300 600 1200

NOTES

1. AERIAL IMAGE FROM NYS GIS CLEARINGHOUSE HIGH RESOLUTION DIGITAL ORTHOIMAGERY (6-INCH RESOLUTION - 2004).

MALCOLM PIRNIE	GTE - OPERATIONS SUPPORT, INC. HICKSVILLE, NY FORMER SYLVANIA ELECTRIC PRODUCTS FACILITY	PROFILE LOCATIONS COMPLETED AS OF OCTOBER 2007	MALCOLM PIRNIE, INC. JANUARY 2008 FIGURE 1

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Stone VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, P-113, and P-114
GTE Operations Support, Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

Client:	GTEOSI
Location:	Hicksville, NY
Project ID:	Groundwater Profiling
SEI #:	071867-R
Date Sampled:	02/02/2007-02/21/2007
Date Analyzed:	02/02/2007-02/21/2007
Report Date:	3/8/2007

Matrix: Water

HOLE ID = P-102

VOC DATA, ug/L

Depth	Vinyl Chloride Value	Q	DF	t-Dichloroethene Value	Q	DF	c-Dichloroethene Value	Q	DF	Trichloroethene Value	Q	DF	Tetrachloroethene Value	Q	DF	% SS
75.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	121
85.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	124
95.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	93
105.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
115.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
138.1	1	U	1	1	U	1	1	U	1	1	U	1	1		1	93
150.5	1	U	1	1	U	1	1	U	1	1	U	1	2		1	121
160.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
170.5	1	U	1	1	U	1	1	U	1	1	U	1	1		1	100
180.4	1	U	1	1	U	1	1	U	1	2		1	3		1	96
205.2	1	U	1	1	U	1	1		1	2		1	33		1	89
215.2	1	U	1	1	U	1	5		1	7		1	170		10	88
225.2	1	U	1	1	U	1	1	U	1	2		1	24		1	87
235.2	1	U	1	1	U	1	1	U	1	3		1	35		1	82
245.2	1	U	1	1	U	1	1	U	1	6		1	48		1	98
257.7	1	U	1	1	U	1	2		1	7		1	500		1	94
265.2	1	U	1	1	U	1	13		1	240	J	240	4800		240	93
275.2	1	U	1	1	U	1	9		1	370	J	100	2900		100	90
283.4	1	U	1	1	U	1	4		1	81		1	1200		24	95
309.4	1	U	1	1	U	1	7		1	14		1	1000		24	114
320.3	1	U	1	1	U	1	1	U	1	1	U	1	71		1	107
329.3	1	U	1	1	U	1	1	U	1	1	U	1	80		1	111
340.3	1	U	1	1	U	1	1	U	1	1	U	1	70		1	108
361.8	1	U	1	1	U	1	1	U	1	1	U	1	98		24	108
370.6	1	U	1	1	U	1	1	U	1	1	U	1	19		1	113
381.0	1	U	1	1	U	1	1	U	1	1	U	1	21		1	105
389.9	1	U	1	1	U	1	1	U	1	3		1	83		10	114
422.1	1	U	1	1	U	1	1	U	1	1	U	1	1		1	109
431.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
449.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
459.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
474.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103

INORGANIC DATA, mg/L

Fe^{+2}	Fe, Total	Ammonia	Chloride	Chlorine, Total
0.37	0.69	0.22	82	0.28
0.28	0.56	0.22	35	0.05
0.40	0.80	0.34	67	0.40
0.24	0.39	0.03	16	ND
0.11	0.24	0.03	20	ND
0.52	0.68	2.5	29	ND
0.45	0.50	2.5	19	ND
0.34	1.02	1.6	48	0.12
0.70	2.70	5.9	26	0.92
0.63	0.81	7.2	66	ND
0.23	0.37	2.8	31	ND
0.32	0.36	4.5	51	ND
0.22	0.39	8.8	20	ND
0.36	0.52	4.0	34	0.02
0.47	0.49	6.2	29	ND
0.31	0.44	9.4	35	ND
0.38	0.64	8.00	19	0.10
0.35	0.71	0.70	13	0.13
NA	NA	NA	NA	NA
0.06	0.23	0.17	32	0.02
0.06	0.20	0.30	72	ND
0.04	0.18	0.04	107	0.03
0.04	0.27	0.08	100	0.02
0.06	0.21	0.07	68	0.03
0.03	0.20	0.08	42	0.03
0.02	0.13	0.04	29	0.02
0.02	0.12	0.04	12	ND
0.22	0.80	0.20	47	0.15
0.10	0.37	0.10	4	0.06
0.02	0.18	0.06	3	ND
0.07	0.23	0.29	28	0.02
ND	0.10	0.04	27	ND

Freons, ug/L

Freon 113 Value	Q	DF	Freon 123 Value	Q	DF	Freon 123A Value	Q	DF
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
3		1	1	U	1	1	U	1
4		1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1

VOC DATA, ug/L

Depth	1,1-Dichloroethene Value	Q	DF	1,1-Dichloroethane Value	Q	DF	1,1,1-Trichloroethane Value	Q	DF	1,1,1,2-Tetrachloroethane	Q	DF	Carbon Tetrachloride Value	Q	DF	Benzene Value	Q	DF	1,2-Dichlorothane Value	Q	DF
75.5	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
85.5	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
95.5	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
105.5	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
115.5	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
138.1	1	U	1	1	U	1	1		1	NA			1	U	1	1	U	1	1	U	1
150.5	1	U	1	2		1	2		1	NA			1	U	1	1	U	1	1	U	1
160.4	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
170.5	1		1	3		1	4		1	NA			1	U	1	1	U	1	1	U	1
180.4	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
205.2	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
215.2	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
225.2	1		1	1		1	3		1	NA			1	U	1	1	U	1	1	U	1
235.2	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
245.2	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
257.7	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
265.2	1	U	1	1	U	1	1	U	1	NA			5		1	1	U	1	1	U	1
275.2	1	U	1	1	U	1	1	U	1	NA			5		1	1	U	1	1	U	1
283.4	1	U	1	1	U	1	1	U	1	NA			1	U	1	1	U	1	1	U	1
309.4	1	U	1	1	U	1	1	U	1	1		1	1		1	1	U	1	1	U	1
320.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
329.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
340.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
361.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
370.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
381.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
389.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
422.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
431.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
449.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	
459.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	
474.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	

Depth	Toluene Value	Q	DF	Chlorobenzene Value	Q	DF	Ethylbenzene Value	Q	DF	m,p-Xylene Value	Q	DF	o-Xylene Value	Q	DF	1,3-Dichlorobenzene Value	Q	DF	1,4-Dichlorobenzene Value	Q	DF	1,2-Dichlorobenzene Value	Q	DF	%SS
75.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	121
85.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	124
95.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	93
105.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
115.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
138.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	93
150.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	121
160.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
170.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
180.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
205.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	89
215.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	8		1	88
225.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	87
235.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	82
245.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
257.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94
265.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	7		1	93
275.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	90
283.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	3		1	95
309.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
320.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
329.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
340.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
361.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
370.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
381.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
389.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
422.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
431.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
449.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
459.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
474.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb

%SS = Surrogate Recovery

U = Undetected below the specified reporting limit.

J = Estimated value.

ND = Value below detection limit.

NA = Not Analyzed.

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Stone VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, P-113, and P-114
GTE Operations Support, Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

Client: GTEOSI
Location: Hicksville, NY
Project ID: Groundwater Profiling
SEI #: 071867-R
Date Sampled: 02/28/2007-03/20/2007
Date Analyzed: 02/28/2007-03/20/2007
Report Date: 3/22/2007

Matrix: Water

HOLE ID = P-104

VOC DATA, ug/L

Depth	Vinyl Chloride Value	Q	DF	t-Dichloroethene Value	Q	DF	c-Dichloroethene Value	Q	DF	Trichloroethene Value	Q	DF	Tetrachloroethene Value	Q	DF	% SS
75.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
85.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
93.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
105.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
112.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
147.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
155.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
163.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
173.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
184.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
195.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	118
205.0	1	U	1	1	U	1	1	U	1	4		1	5		1	108
215.0	1	U	1	1	U	1	1	U	1	1	U	1	3		1	96
224.7	1	U	1	1	U	1	1		1	47		1	530		10	99
235.0	1	U	1	1	U	1	10		1	140		10	560		10	107
245.0	1	U	1	1	U	1	10		1	230		10	1000		10	112
253.7	1	U	1	1	U	1	1	U	1	2		1	11		1	105
267.8	1	U	1	1	U	1	1		1	47		1	39		1	109
291.3	1	U	1	1	U	1	2		1	19		1	30		1	105
313.9	1	U	1	1	U	1	8		1	210		5	530		5	111
320.0	1	U	1	1	U	1	9		1	940		10	900		10	107
330.0	1	U	1	1	U	1	9		1	730		10	720		10	113
340.0	1	U	1	1	U	1	11		1	840		10	1000		10	108
348.7	1	U	1	1	U	1	20		1	89		10	3300		10	113
377.4	1	U	1	1	U	1	11		1	24		1	3100		10	108
385.0	1	U	1	1	U	1	10		1	18		1	2100		10	113
394.7	1	U	1	1	U	1	2		1	3		1	240		10	113
400.0	1	U	1	1	U	1	1	U	1	1		1	95		1	115
411.0	1	U	1	1	U	1	1	U	1	1	U	1	39		1	112
419.6	1	U	1	1	U	1	1	U	1	1	U	1	63		10	113
427.9	1	U	1	1	U	1	1	U	1	1	U	1	21		1	116
441.1	1	U	1	1	U	1	1	U	1	1	U	1	12		1	120
450.0	1	U	1	1	U	1	1	U	1	1	U	1	15		1	117
461.7	1	U	1	1	U	1	1	U	1	1	U	1	7		1	112
471.0	1	U	1	1	U	1	1	U	1	1	U	1	4		1	103
482.4	1	U	1	1	U	1	1	U	1	1	U	1	1		1	121
489.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	120

INORGANIC DATA, mg/L

Fe^{++}	Fe, Total	Ammonia	Chloride	Chlorine, Total
ND	0.32	0.06	113	ND
NA	NA	NA	NA	NA
0.06	0.43	0.28	48	0.04
ND	0.18	ND	38	ND
0.05	0.35	0.18	102	0.03
ND	0.12	0.02	67	ND
ND	0.21	0.02	79	ND
ND	0.19	ND	43	ND
0.04	0.28	0.18	45	0.02
0.11	0.43	0.21	42	0.05
0.12	0.56	0.26	48	0.07
0.23	1.32	0.90	49	0.24
0.15	0.39	0.24	44	0.02
0.36	0.41	0.03	40	ND
0.15	1.04	0.44	28	0.04
0.05	1.90	0.40	14	0.12
0.41	0.51	0.07	12	ND
0.03	0.14	0.07	22	ND
0.46	25.70	4.9	10	0.68
0.10	0.35	0.19	ND	ND
0.04	0.15	0.14	15	ND
0.09	0.20	0.02	14	ND
0.08	0.14	0.04	16	ND
0.07	0.16	0.09	16	0.03
ND	0.35	0.11	32	0.03
0.03	0.09	0.11	47	ND
0.05	0.17	0.19	75	0.05
ND	0.10	0.04	39	ND
0.06	0.11	0.06	19	ND
ND	0.27	0.04	34	0.02
0.09	0.21	0.12	39	0.08
0.10	0.22	0.17	35	0.09
0.04	0.06	0.13	26	0.10
ND	ND	0.03	ND	ND
ND	0.09	0.06	ND	0.02
0.07	0.46	0.04	ND	0.05
ND	ND	0.02	ND	0.03

Freons, ug/L

Freon 113 Value	Q	DF	Freon 123 Value	Q	DF	Freon 123A Value	Q	DF
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1		1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
7		1	1	U	1	1	U	1
3		1	1	U	1	1	U	1
3		1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1

VOC DATA, ug/L

Depth	1,1-Dichloroethene Value	Q	DF	1,1-Dichloroethane Value	Q	DF	1,1,1-Trichloroethane Value	Q	DF	1,1,1,2-Tetrachloroethane Value	Q	DF	Carbon Tetrachloride Value	Q	DF	Benzene Value	Q	DF	1,2-Dichlorothane Value	Q	DF
75.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
85.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
93.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
105.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
112.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
147.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
155.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
163.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
173.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
184.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
195.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
205.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
215.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
224.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
235.0	1		1	1	U	1	1		1	1	U	1	1	U	1	1	U	1	1	U	1
245.0	1	U	1	1	U	1	1	U	1	1		1	6		1	1	U	1	1	U	1
253.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
267.8	1	U	1	1	U	1	1		1	1	U	1	1		1	1	U	1	1	U	1
291.3	1	U	1	1	U	1	1	U	1	1	U	1	2		1	1	U	1	1	U	1
313.9	1	U	1	1	U	1	1	U	1	1	U	1	7		1	1	U	1	1	U	1
320.0	3		1	1	U	1	2		1	1	U	1	12		1	1	U	1	1	U	1
330.0	1		1	1	U	1	1	U	1	1		1	10		1	1	U	1	1	U	1
340.0	2		1	1	U	1	1		1	1		1	11		1	1	U	1	1	U	1
348.7	1	U	1	1	U	1	1	U	1	4		1	3		1	1	U	1	1	U	1
377.4	1	U	1	1	U	1	1	U	1	2		1	2		1	1	U	1	1	U	1
385.0	1	U	1	1	U	1	1	U	1	2		1	2		1	1	U	1	1	U	1
394.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
400.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
411.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
419.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
427.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
441.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
450.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
461.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
471.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
482.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
489.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1

Depth	Toluene Value	Q	DF	Chlorobenzene Value	Q	DF	Ethylbenzene Value	Q	DF	m,p-Xylene Value	Q	DF	o-Xylene Value	Q	DF	1,3-Dichlorobenzene Value	Q	DF	1,4-Dichlorobenzene Value	Q	DF	1,2-Dichlorobenzene Value	Q	DF	%SS
75.0	2		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
85.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
93.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
105.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
112.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
147.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
155.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
163.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
173.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
184.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
195.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	118
205.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
215.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
224.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
235.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
245.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
253.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
267.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
291.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
313.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
320.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
330.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
340.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
348.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
377.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
385.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
394.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
400.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	115
411.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
419.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
427.9	1		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116
441.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	120
450.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	117
461.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
471.0	1	U	1	1	U	1	1	U	1	1	U		1	U	1	1	U	1	1	U	1	1	U	1	103
482.4	1	U	1	1	U	1	1	U	1	1	U		1	U	1	1	U	1	1	U	1	1	U	1	121
489.4	1	U	1	1	U	1	1	U	1	1	U		1	U	1	1	U	1	1	U	1	1	U	1	120

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb
%SS = Surrogate Recovery
U = Undetected below the specified reporting limit.
ND = Value below detection limit.
NA = Not Analyzed.

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Stone VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, P-113, and P-114
GTE Operations Support, Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

Client:	GTEOSI
Location:	Hicksville, NY
Project ID:	Groundwater Profiling
SEI #:	071867-R
Date Sampled:	6/14/2007-7/03/2007
Date Analyzed:	6/14/2007-7/03/2008
Report Date:	7/10/2007

Matrix: Water

HOLE ID = P-110

VOC DATA, ug/L

Depth	Vinyl Chloride Value	Q	DF	t-Dichloroethene Value	Q	DF	c-Dichloroethene Value	Q	DF	Trichloroethene Value	Q	DF	Tetrachloroethene Value	Q	DF	% SS
71.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
80.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
91.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
99.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
108.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
119.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
142.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
150.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
160.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
170.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
180.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
190.2	1	U	1	1	U	1	1		1	1	U	1	2		1	108
199.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
209.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
221.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
229.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
239.8	1	U	1	1	U	1	1	U	1	1		1	1	U	1	109
249.2	1	U	1	1	U	1	1	U	1	2		1	1	U	1	111
260.2	1	U	1	1	U	1	1	U	1	4		1	1	U	1	119
269.8	1	U	1	1	U	1	1	U	1	13		1	1		1	111
281.7	1	U	1	1	U	1	1	U	1	24		1	1		1	103
290.2	1	U	1	1	U	1	1	U	1	20		1	1		1	103
311.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
320.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
329.2	1	U	1	1	U	1	1	U	1	12		1	2		1	107
338.8	1	U	1	1	U	1	4		1	120		10	8		1	109
350.2	1	U	1	1	U	1	19		1	400		100	26		1	111
359.4	1	U	1	1	U	1	6		1	150		1	22		1	107
391.1	1	U	1	1	U	1	1	U	1	80		1	61		1	103
400.0	1	U	1	1	U	1	3		1	220		1	62		1	100
408.5	1	U	1	1	U	1	1	U	1	100		1	80		1	103
421.2	1	U	1	1	U	1	3		1	13		1	350		1	106
429.4	1	U	1	1	U	1	4		1	21		1	480		24	99
439.3	1	U	1	1	U	1	13		1	28		1	2100		48	101
452.2	1	U	1	1	U	1	3		1	10		1	120		1	102
460.2	1	U	1	1	U	1	2		1	12		1	57		1	107
470.1	1	U	1	1	U	1	1		1	15		1	36		1	100
481.7	1	U	1	1	U	1	1	U	1	3		1	26		1	105
489.5	1	U	1	1	U	1	1	U	1	2		1	5		1	101
499.5	1	U	1	1	U	1	1	U	1	2		1	3		1	105
513.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105

INORGANIC DATA, mg/L

Fe^{++}	Fe, Total	Ammonia	Chloride	Chlorine, Total
0.22	0.48	0.13	26	0.05
0.24	0.34	0.09	24	ND
0.09	0.29	0.02	37	ND
0.07	0.30	0.02	36	ND
0.21	0.33	0.90	19	ND
0.41	0.94	1.30	33	0.05
0.43	0.54	0.11	29	0.10
0.40	0.42	0.08	35	ND
0.24	0.26	0.12	35	ND
0.13	0.81	0.12	24	0.04
0.24	0.64	0.19	28	0.28
0.32	0.56	0.28	28	0.06
0.30	0.71	0.20	40	0.07
0.62	1.20	0.40	42	0.19
0.51	1.25	ND	39	1.14
0.71	2.12	0.60	40	0.03
0.29	0.45	0.12	36	ND
0.43	0.61	0.21	36	0.03
0.55	0.82	0.22	22	0.07
0.27	0.54	0.17	20	0.04
0.26	0.39	0.15	20	ND
0.15	0.34	0.07	21	ND
0.28	0.63	0.22	20	0.04
0.43	0.74	0.31	27	0.11
0.32	0.45	0.32	18	0.08
0.19	0.43	0.20	18	0.12
0.15	0.21	0.15	17	0.03
0.14	0.35	0.21	20	0.05
0.04	0.04	0.07	13	ND
0.05	0.48	0.08	17	ND
ND	0.04	0.07	18	ND
0.03	0.08	0.03	23	ND
ND	0.04	0.03	16	ND
0.05	0.12	0.08	18	ND
ND	0.06	0.04	11	0.02
0.23	0.51	0.19	ND	0.32
ND	0.05	0.02	ND	ND
0.19	0.40	0.30	14	0.14
0.19	0.77	0.09	29	0.04
0.32	0.62	0.40	13	0.09
0.15	0.36	0.08	ND	0.20

Freons

Freon 113 Value	Q	DF	Freon 123 Value	Q	DF	Freon 123A Value	Q	DF
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
2		1	1	U	1	1	U	1
8		1	1	U	1	1	U	1
3		1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
4		1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1

VOC DATA, ug/L

Depth	1,1-Dichloroethene Value	Q	DF	1,1-Dichloroethane Value	Q	DF	1,1,1-Trichloroethane Value	Q	DF	1,1,1,2-Tetrachloroethane Value	Q	DF	Carbon Tetrachloride Value	Q	DF	Benzene Value	Q	DF
71.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
80.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
91.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
99.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
108.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
119.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
142.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
150.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
160.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
170.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
180.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
190.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
199.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
209.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
221.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
229.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
239.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
249.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
260.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
269.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
281.7	1		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
290.2	1		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
311.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
320.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
329.2	1	U	1	1	U	1	1	U	1	1	U	1	2		1	1	U	1
338.8	4		1	1	U	1	3		1	1	U	1	4		1	1	U	1
350.2	11		1	2		1	7		1	1	U	1	8		1	1	U	1
359.4	7		1	1	U	1	6		1	1	U	1	9		1	1	U	1
391.1	17		1	1	U	1	11		1	1	U	1	18		1	1	U	1
400.0	16		1	1	U	1	10		1	1	U	1	14		1	1	U	1
408.5	32		1	1	U	1	24		1	1	U	1	31		1	1	U	1
421.2	1	U	1	1	U	1	1	U	1	1	U	1	2		1	1	U	1
429.4	1	U	1	1	U	1	1	U	1	1	U	1	4		1	1	U	1
439.3	1	U	1	1	U	1	1	U	1	2		1	5		1	1	U	1
452.2	1	U	1	1	U	1	1	U	1	1	U	1	2		1	1	U	1
460.2	1	U	1	1	U	1	1	U	1	1	U	1	2		1	1	U	1
470.1	1	U	1	1	U	1	1	U	1	1	U	1	2		1	1	U	1
481.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
489.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
499.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
513.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1

Depth	1,2-Dichloroethane Value	Q	DF	Toluene Value	Q	DF	Chlorobenzene Value	Q	DF	Ethylbenzene Value	Q	DF	m,p-Xylene Value	Q	DF	o-Xylene Value	Q	DF	1,3-Dichlorobenzene Value	Q	DF	1,4-Dichlorobenzene Value	Q	DF	1,2-Dichlorobenzene Value	Q	DF	%SS
71.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
80.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
91.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U		109
99.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
108.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
119.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
142.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
150.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
160.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
170.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
180.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
190.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
199.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
209.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
221.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
229.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
239.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
249.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
260.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	119
269.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
281.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
290.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
311.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
320.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
329.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
338.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
350.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
359.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
391.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
400.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
408.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
421.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
429.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
439.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
452.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
460.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
470.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
481.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
489.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
499.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
513.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb

%SS = Surrogate Recovery

U = Undetected below the specified reporting limit.

ND = Value below detection limit.

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Stone VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, P-113, and P-114
GTE Operations Support, Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

Client: GTEOSI
Location: Hicksville, NY
Project ID: Groundwater Profiling
SEI #: 071867-R
Date Sampled: 06/07/2007-06/20/2007
Date Analyzed: 06/07/2007-06/20/2007
Report Date: 6/26/2007

Matrix: Water

HOLE ID = P-112

	VOC DATA, ug/L															
	Vinyl Chloride			t-Dichloroethene			c-Dichloroethene			Trichloroethene			Tetrachloroethene			% SS
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
75.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
85.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
95.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
105.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
115.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
125.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
135.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
142.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
151.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94
161.6	1	U	1	1	U	1	1	U	1	6		1	7		1	97
170.2	1	U	1	1	U	1	1	U	1	7		1	6		1	100
179.6	1	U	1	1	U	1	1	U	1	14		1	4		1	100
190.2	1	U	1	1	U	1	1	U	1	8		1	6		1	100
232.2	1	U	1	1	U	1	1	U	1	17		1	86		1	101
240.2	1	U	1	1	U	1	6		1	33		1	120		1	105
250.2	1	U	1	1	U	1	1	U	1	4		1	20		1	102
258.4	1	U	1	1	U	1	1	U	1	2		1	2		1	100
300.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
305.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
314.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
324.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94
336.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
344.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
353.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
364.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
374.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
391.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
399.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
409.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
426.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
427.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
434.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99

INORGANIC DATA, mg/L				
Fe^{+2}	Fe, Total	Ammonia	Chloride	Chlorine, Total
NA	NA	NA	NA	NA
0.08	0.42	0.11	52	0.05
ND	0.37	ND	40	0.02
ND	0.28	ND	37	ND
0.03	0.17	ND	51	0.13
0.17	0.61	0.19	50	0.09
0.07	0.31	0.20	37	0.07
0.03	0.32	0.03	29	0.03
0.08	0.41	0.12	25	0.04
0.33	0.44	ND	150	0.04
0.71	1.47	0.20	103	0.37
0.34	0.60	0.16	64	0.09
0.23	0.35	ND	66	ND
0.05	0.18	0.07	23	0.05
0.04	0.11	ND	20	0.04
0.04	0.18	ND	44	ND
ND	0.21	0.04	42	ND
NA	NA	NA	NA	NA
ND	0.11	0.06	ND	ND
0.10	0.23	0.13	97	ND
0.05	0.20	0.11	173	0.09
0.05	0.14	0.05	171	ND
0.06	0.22	0.08	238	0.07
ND	0.16	0.03	212	0.03
0.16	0.26	0.22	227	0.08
NA	NA	NA	NA	NA
0.04	0.12	ND	361	ND
0.10	0.24	0.10	317	0.04
0.29	0.63	0.52	254	ND
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
0.24	0.56	0.05	137	ND

Freons, ug/L								
Freon 113			Freon 123			Freon 123A		
Value	Q	DF	Value	Q	DF	Value	Q	DF
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1

	VOC DATA, ug/L																							
	1,1-Dichloroethene			1,1-Dichloroethane			1,1,1-Trichloroethane			1,1,1,2-Tetrachloroethane			Carbon Tetrachloride			Benzene			1,2-Dichlorothane			Toluene		
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF		Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF
75.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
85.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
95.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
105.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
115.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
125.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
135.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
142.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
151.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
161.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
170.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
179.6	1	U	1	1	U	1	1		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
190.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
232.2	2		1	1	U	1	2		1	1	U	1	2		1	1	U	1	1	U	1	1	U	1
240.2	1	U	1	1	U	1	1	U	1	1	U	1	1		1	1	U	1	1	U	1	1	U	1
250.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
258.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
300.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
305.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
314.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
324.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
336.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
344.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
353.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
364.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
374.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
391.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
399.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
409.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
426.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
427.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
434.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1

	Chlorobenzene			Ethylbenzene			m,p-Xylene			o-Xylene			1,3-Dichlorobenzene			1,4-Dichlorobenzene			1,2-Dichlorobenzene			%SS
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
75.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
85.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
95.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
105.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
115.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
125.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
135.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
142.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
151.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94
161.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	97
170.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
179.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
190.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
232.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
240.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
250.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
258.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
300.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
305.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
314.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
324.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94
336.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
344.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
353.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
364.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
374.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
391.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
399.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
409.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
426.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
427.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
434.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb

%SS = Surrogate Recovery

U = Undetected below the specified reporting limit.

ND = Value below detection limit.

NA = Not Analyzed.

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Stone VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, P-113, and P-114
GTE Operations Support, Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

Client:	GTEOSI
Location:	Hicksville, NY
Project ID:	Groundwater Profiling
SEI #:	071867-R
Date Sampled:	05/29/2007-06/07/2007
Date Analyzed:	05/29/2007-06/07/2008
Report Date:	7/11/2007

Matrix: Water

HOLE ID = P-113	VOC DATA, ug/L														
	Vinyl Chloride			t-Dichloroethene			c-Dichloroethene			Trichloroethene			Tetrachloroethene			%SS
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
74.6	1	U	1	1	U	1	1	U	1	1	U	1	6		1	100
84.9	1	U	1	1	U	1	1	U	1	1	U	1	2		1	82
94.7	1	U	1	1	U	1	1	U	1	1	U	1	2		1	101
104.6	1	U	1	1	U	1	1	U	1	2		1	2		1	97
121.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
129.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
139.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
149.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
159.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
168.4	1	U	1	1	U	1	2		1	12		1	2		1	101
179.5	1	U	1	1	U	1	14		1	180		10	10		1	105
187.9	1	U	1	1	U	1	1	U	1	6		1	1	U	1	99
199.2	1	U	1	1	U	1	1	U	1	6		1	1	U	1	99
209.3	1	U	1	1	U	1	1	U	1	4		1	1	U	1	100
219.9	1	U	1	1	U	1	1	U	1	6		1	1	U	1	100
229.9	1	U	1	1	U	1	1	U	1	6		1	1	U	1	95
239.4	1	U	1	1	U	1	1	U	1	2		1	1	U	1	108
249.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
261.4	1	U	1	1	U	1	1	U	1	1		1	1	U	1	104
269.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
281.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
339.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
349.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
366.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
379.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95

INORGANIC DATA, mg/L				
Fe^{+2}	Fe, Total	Ammonia	Chloride	Chlorine, Total
NA	NA	NA	NA	NA
0.33	1.96	0.57	ND	0.17
0.32	0.51	0.42	ND	0.12
0.17	1.23	0.36	12	0.06
0.11	0.23	0.14	11	ND
0.34	0.55	0.12	22	ND
0.36	0.44	0.20	30	ND
0.29	0.37	0.14	29	0.02
0.29	0.34	0.09	35	ND
0.61	2.12	0.21	36	0.23
0.35	0.47	0.12	40	ND
0.14	0.90	0.26	67	0.07
0.22	0.46	0.24	48	0.02
ND	0.19	0.07	60	ND
0.49	0.81	0.35	31	0.04
0.09	0.23	0.08	28	ND
ND	0.15	0.03	95	0.03
0.25	0.30	0.05	231	ND
0.04	0.17	0.06	35	0.04
0.05	0.23	0.07	18	0.02
0.03	0.10	0.04	11	ND
ND	0.42	0.06	75	0.04
0.15	2.71	0.53	269	0.11
0.05	0.12	0.06	208	ND
ND	0.18	0.05	285	0.12

Freons								
Freon 113			Freon 123			Freon 123A		
Value	Q	DF	Value	Q	DF	Value	Q	DF
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1

VOC DATA, ug/L

	1,1-Dichloroethene			1,1-Dichloroethane			1,1,1-Trichloroethane			1,1,1,2-Tetrachloroethane			Carbon Tetrachloride			Benzene			1,2-Dichlorothane		
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF
74.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
84.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
94.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
104.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
121.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
129.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
139.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
149.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
159.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
168.4	1	U	1	3		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
179.5	4		1	2		1	1		1	1	U	1	1	U	1	1	U	1	1	U	1
187.9	1	U	1	4		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
199.2	1	U	1	6		1	1		1	1	U	1	1	U	1	1	U	1	1	U	1
209.3	1	U	1	5		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
219.9	1	U	1	13		1	1		1	1	U	1	1	U	1	1	U	1	1	U	1
229.9	2		1	21		1	2		1	1	U	1	1	U	1	1	U	1	1	U	1
239.4	2		1	1		1	2		1	1	U	1	1	U	1	1	U	1	1	U	1
249.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
261.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
269.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
281.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
339.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
349.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
366.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
379.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1

	Toluene			Chlorobenzene			Ethylbenzene			m,p-Xylene			o-Xylene			1,3-Dichlorobenzene			1,4-Dichlorobenzene			1,2-Dichlorobenzene			%SS
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
74.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
84.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	82
94.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
104.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	97
121.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
129.9	1	U	1	2		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
139.9	1	U	1	2		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
149.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
159.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
168.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
179.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
187.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
199.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
209.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
219.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
229.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
239.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
249.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
261.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
269.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
281.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
339.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
349.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
366.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
379.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb

%SS = Surrogate Recovery

U = Undetected below the specified reporting limit.

ND = Value below detection limit.

NA = Not Analyzed.

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Stone VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, P-113, and P-114
GTE Operations Support, Incorporated
Former Sylvania Electric Products Facility
Hicksville, NY

Client: GTEOSI
Location: Hicksville, NY
Project ID: Groundwater Profiling
SEI #: 071867-R
Date Sampled: 7/11/2007-7/28/2007
Date Analyzed: 7/11/2007-7/28/2007
Report Date: 8/9/2007

Matrix: Water

HOLE ID = P-114	VOC DATA, ug/L															
	Vinyl Chloride			l-Dichloroethene			c-Dichloroethene			Trichloroethene			Tetrachloroethene			% SS
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
74.10	1	U	1	1	U	1	2		1	10		1	1	U	1	107
84.75	1	U	1	1	U	1	1	U	1	2		1	1	U	1	109
94.75	1	U	1	1	U	1	1	U	1	3		1	1	U	1	114
104.75	1	U	1	1	U	1	1	U	1	6		1	1	U	1	106
114.55	1	U	1	1	U	1	9		1	32		1	12		1	104
124.75	1	U	1	1	U	1	17		1	110		1	15		1	103
134.75	1	U	1	1	U	1	78		1	380		1	35		1	112
143.80	1	U	1	1	U	1	78		1	400		1	26		1	119
161.50	5		1	1	U	1	140		1	970		5	22		1	100
169.70	9		1	1	U	1	110		5	630		5	18		1	109
179.10	10		1	1	U	1	240		1	850		5	14		1	105
193.80	14		1	1	U	1	220		4	690		4	6		1	105
203.85	7		1	1	U	1	110		24	710		24	24		1	99
213.80	1	U	1	1	U	1	29		1	400		1	16		1	104
222.80	1	U	1	1	U	1	20		1	310		1	21		1	100
234.00	1	U	1	1	U	1	13		1	230		1	13		1	101
244.40	1	U	1	1	U	1	11		1	84		1	7		1	103
271.90	1	U	1	1	U	1	19		1	150		1	8		1	105
280.00	1	U	1	1	U	1	21		1	140		1	10		1	108
289.80	1	U	1	1	U	1	22		1	77		1	4		1	107
298.25	1	U	1	1	U	1	22		1	98		1	4		1	108
309.80	1	U	1	1	U	1	5		1	25		1	2		1	111
319.80	1	U	1	1	U	1	1	U	1	4		1	1	U	1	98
329.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
340.15	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
348.15	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
359.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
368.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
456.38	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
464.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
473.41	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
484.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
494.40	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
504.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
513.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
523.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104

	INORGANIC DATA, mg/L				
Depth	Fe^{+2}	Fe, Total	Ammonia	Chloride	Chlorine, Total
74.10	0.44	0.58	0.06	94	ND
84.75	0.22	0.38	0.13	79	0.07
94.75	0.13	0.18	0.04	57	ND
104.75	0.18	0.33	0.05	45	ND
114.55	0.36	0.45	0.24	36	ND
124.75	0.27	0.36	0.08	38	ND
134.75	0.43	0.45	0.14	46	ND
143.80	0.78	0.78	0.05	45	ND
161.50	0.68	0.81	0.13	58	0.02
169.70	0.40	0.49	0.08	44	ND
179.10	0.41	0.52	0.42	53	ND
193.80	0.61	0.72	0.12	52	ND
203.85	0.33	1.30	0.25	52	0.04
213.80	0.64	0.66	0.05	49	ND
222.80	0.20	0.27	0.08	52	0.15
234.00	0.35	0.38	0.04	50	ND
244.40	0.42	0.47	0.06	60	ND
271.90	0.51	0.53	0.02	46	0.04
280.00	0.51	0.67	ND	40	ND
289.80	0.52	0.62	0.05	38	ND
298.25	0.58	0.60	ND	41	ND
309.80	0.39	0.34	ND	32	0.05
319.80	0.22	0.29	0.08	11	0.03
329.00	ND	0.03	ND	ND	ND
340.15	NA	NA	NA	NA	NA
348.15	0.16	0.32	0.06	40	0.02
359.80	0.34	2.60	0.36	58	0.25
368.10	0.24	0.36	0.10	33	ND
456.38	0.14	0.16	0.03	316	ND
464.90	0.04	0.15	0.06	349	ND
473.41	0.06	0.17	0.07	233	0.02
484.10	0.04	0.08	0.05	35	0.05
494.40	0.03	0.09	0.07	37	0.04
504.90	0.11	0.21	0.13	29	0.09
513.30	0.20	1.98	0.31	13	0.20
523.90	0.05	0.06	0.04	ND	0.02

	Freons								
	Freon 113			Freon 123			Freon 123A		
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF
74.10	2		1	1	U	1	1	U	1
84.75	1		1	1	U	1	1	U	1
94.75	1	U	1	1	U	1	1	U	1
104.75	1	U	1	1	U	1	1	U	1
114.55	10		1	1	U	1	1	U	1
124.75	2		1	1	U	1	1	U	1
134.75	4		1	1	U	1	1	U	1
143.80	4		1	1	U	1	1	U	1
161.50	1	U	1	1	U	1	1	U	1
169.70	1	U	1	1	U	1	1	U	1
179.10	1	U	1	1	U	1	1	U	1
193.80	1	U	1	1	U	1	1	U	1
203.85	1	U	1	1	U	1	1	U	1
213.80	1	U	1	1	U	1	1	U	1
222.80	1		1	1	U	1	1	U	1
234.00	1	U	1	1	U	1	1	U	1
244.40	1	U	1	1	U	1	1	U	1
271.90	1	U	1	1	U	1	1	U	1
280.00	1	U	1	1	U	1	1	U	1
289.80	1	U	1	1	U	1	1	U	1
298.25	1	U	1	1	U	1	1	U	1
309.80	1	U	1	1	U	1	1	U	1
319.80	1	U	1	1	U	1	1	U	1
329.00	1	U	1	1	U	1	1	U	1
340.15	1	U	1	1	U	1	1	U	1
348.15	1	U	1	1	U	1	1	U	1
359.80	1	U	1	1	U	1	1	U	1
368.10	1	U	1	1	U	1	1	U	1
456.38	1	U	1	1	U	1	1	U	1
464.90	1	U	1	1	U	1	1	U	1
473.41	1	U	1	1	U	1	1	U	1
484.10	1	U	1	1	U	1	1	U	1
494.40	1	U	1	1	U	1	1	U	1
504.90	1	U	1	1	U	1	1	U	1
513.30	1	U	1	1	U	1	1	U	1
523.90	1	U	1	1	U	1	1	U	1

	VOC DATA, ug/L																							
	1,1-Dichloroethene			1,1-Dichloroethane			1,1,1-Trichloroethane			1,1,1,2-Tetrachloroethane			Carbon Tetrachloride			Benzene			1,2-Dichloroethane			Toluene		
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF
74.10	1	U	1	1	U	1	9		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
84.75	1	U	1	1	U	1	6		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
94.75	1	U	1	1	U	1	3		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
104.75	1	U	1	1	U	1	3		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
114.55	2		1	3		1	2		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
124.75	1		1	3		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
134.75	3		1	3		1	1		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
143.80	3		1	4		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
161.50	3		1	4		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
169.70	3		1	6		1	1		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
179.10	3		1	5		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
193.80	4		1	11		1	1		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
203.85	3		1	7		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
213.80	2		1	7		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
222.80	3		1	3		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
234.00	2		1	2		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
244.40	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
271.90	3		1	17		1	2		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
280.00	10		1	20		1	6		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
289.80	9		1	24		1	7		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
298.25	10		1	25		1	8		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
309.80	1	U	1	3		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
319.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
329.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
340.15	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
348.15	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
359.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
368.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
456.38	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
464.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
473.41	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
484.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
494.40	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
504.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
513.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
523.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1

	Chlorobenzene			Ethylbenzene			m,p-Xylene			o-Xylene			1,3-Dichlorobenzene			1,4-Dichlorobenzene			1,2-Dichlorobenzene			%SS
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
74.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
84.75	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
94.75	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
104.75	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
114.55	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
124.75	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
134.75	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
143.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	119
161.50	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
169.70	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
179.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
193.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
203.85	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
213.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
222.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
234.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
244.40	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
271.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
280.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
289.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
298.25	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
309.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
319.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
329.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
340.15	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
348.15	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
359.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
368.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
456.38	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
464.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
473.41	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
484.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
494.40	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
504.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
513.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
523.90	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb
%SS = Surrogate Recovery
U = Undetected below the specified reporting limit.
ND = Value below detection limit.
NA = Not Analyzed.

STL VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, and P-114
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility
Hicksville, NY

Compound	Units	Sample ID / Depth (feet below ground surface)								
		P-102 75.45 ft	P-102 138.05 ft	P-102 170.45 ft	P-102 309.40 ft	P-102 320.3 ft	P-104 235.00 ft	P-104 245.00 ft	P-104 377.35 ft	P-104 385.00 ft
1,1,1,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	0.95 J	1 U	1 U	1.1	1.7	1.4 J
1,1,1-Trichloroethane	ug/L	1 U	1.7	6.2	1 U	1 U	1.2	0.55 J	0.22 J	0.18 J
1,1,2,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,1,2-Trichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.42 J	0.3 J
1,1-Dichloroethane	ug/L	1 U	1	4	1 U	1 U	0.36 J	0.19 J	0.15 J	0.11 J
1,1-Dichloroethene	ug/L	1 U	0.53 J	1.8	1 U	1 U	1.6	0.27 J	0.22 J	1 UJ
1,2-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,2-Dichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,2-Dichloropropane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,3-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,4-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
2-Butanone	ug/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	5 UJ
2-Hexanone	ug/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	5 UJ
4-Methyl-2-pentanone (MIBK)	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
Acetone	ug/L	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Benzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	0.13 J	0.19 J	0.14 J
Bromodichloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Bromoform	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Bromomethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ
Carbon disulfide	ug/L	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 U	1 UJ
Carbon tetrachloride	ug/L	1 U	1 U	1 U	1	0.2 J	1 U	6.9	3.6	2.8J
Chlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Chloroethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ
Chloroform	ug/L	1 U	1 U	1 U	0.71 J	2.3	0.69 J	0.51 J	0.7 J	0.5 J
Chloromethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ
cis-1,2-Dichloroethene	ug/L	1 U	1 U	1 U	5.1	0.29 J	9.9	9.4	14	12J
cis-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Dibromochloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 U	1 UJ
Ethylbenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Methylene chloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Styrene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Tetrachloroethene	ug/L	1 U	1.4	1.6	1000	94	510	920	2900	2300
Toluene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
trans-1,2-Dichloroethene	ug/L	1 U	1 U	1 U	0.45 J	1 U	1 U	0.71 J	1.1	2 J
trans-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Trichloroethene	ug/L	1 U	1.3U	1 U	14	1 U	110	170	39	30 J
Vinyl chloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Xylenes (total)	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ

Notes

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

STL VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, and P-114
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility
Hicksville, NY

Compound	Units	Sample ID / Depth (feet below ground surface)								
		P-104 427.9 ft	P-104 461.65 ft	P-110 190.15 ft	P-110 260.15 ft	P-110 269.80 ft	P-110 281.70 ft	P-110 290.15 ft	P-110 329.20 ft	P-110 350.15 ft
1,1,1,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/L	1 U	1 U	1 U	1 U	0.51 J	0.77 J	0.75 J	0.27 J	6.1
1,1,2,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	0.17 J	0.2 J	1 U	1.4
1,1-Dichloroethene	ug/L	1 U	1 U	1 U	1 U	0.37 J	0.83 J	0.72 J	0.18 J	6.4
1,2-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.11 J
1,3-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/L	5 U	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
2-Hexanone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Benzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/L	2 U	2 U	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U
Carbon disulfide	ug/L	0.11 J	0.14 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1 U	1 U	1 U	1 U	1 U	0.24 J	0.22 J	1.4	6.9
Chlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	ug/L	2 U	2 U	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	ug/L	1 U	1 U	0.82 J	1 U	1 U	0.16 J	0.16 J	0.2 J	1.1
Chloromethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	ug/L	1 U	1 U	0.97 J	1 U	0.23 J	0.57 J	0.63 J	0.33 J	17
cis-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/L	26	7.6 J	0.96 J	1 U	0.31 J	0.69 J	0.35 J	0.81 J	23
Toluene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.59 J
trans-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/L	1 U	1 U	0.55 J	2.7	11	23	21	12	300
Vinyl chloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.14 J
Xylenes (total)	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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STL VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, and P-114
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility
Hicksville, NY

Compound	Units	Sample ID / Depth (feet below ground surface)								
		P-110 408.45 ft	P-110 421.15	P-110 429.35	P-110 439.25	P-110 452.15	P-110 460.15	P-110 470.05	P-112 179.6 ft	P-112 190.2 ft
1,1,1,2-Tetrachloroethane	ug/L	1 UJ	1 U	0.66 J	1.9	0.18 J	1 U	1 U	1 U	1 UJ
1,1,1-Trichloroethane	ug/L	25 J	0.15 J	0.36 J	1 U	1 U	0.26 J	1 U	1.4	1.2 J
1,1,2,2-Tetrachloroethane	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,1,2-Trichloroethane	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,1-Dichloroethane	ug/L	0.66 J	1 U	1 U	0.13 J	1 U	1 U	1 U	0.37 J	0.54 J
1,1-Dichloroethene	ug/L	13 J	0.13 J	1 U	1 U	1 U	1 U	1 U	0.99 J	1 UJ
1,2-Dichlorobenzene	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,2-Dichloroethane	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,2-Dichloropropane	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	0.6 J	1 UJ
1,3-Dichlorobenzene	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
1,4-Dichlorobenzene	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
2-Butanone	ug/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
2-Hexanone	ug/L	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
4-Methyl-2-pentanone (MIBK)	ug/L	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
Acetone	ug/L	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Benzene	ug/L	1 UJ	1 U	1 U	0.15 J	1 U	1 U	1 U	1 U	1 UJ
Bromodichloromethane	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Bromoform	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Bromomethane	ug/L	2 UJ	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U	2 UJ
Carbon disulfide	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Carbon tetrachloride	ug/L	33 J	1.8 J	2.4 J	3.8	1.4	1.4	0.98 J	1 U	1 UJ
Chlorobenzene	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Chloroethane	ug/L	2 UJ	2 U	2 U	2 UJ	2 UJ	2 UJ	2 UJ	2 U	2 UJ
Chloroform	ug/L	0.68 J	0.23 J	0.33 J	0.6 J	0.31 J	0.27 J	0.21 J	0.36 J	0.31 J
Chloromethane	ug/L	2 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ
cis-1,2-Dichloroethene	ug/L	1 UJ	2.4	4.5	13	2.6	1.4	0.93 J	0.39 J	1 UJ
cis-1,3-Dichloropropene	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Dibromochloromethane	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Ethylbenzene	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Methylene chloride	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	0.42 J	1 U	1 UJ
Styrene	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Tetrachloroethene	ug/L	79	280	480	2000	130 J	56	27	3.8	6.2 J
Toluene	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
trans-1,2-Dichloroethene	ug/L	1 UJ	0.14 J	1 U	1.2	1 U	1 U	1 U	1 U	1 UJ
trans-1,3-Dichloropropene	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Trichloroethene	ug/L	110	14	20	30	10	12	12	20	11J
Vinyl chloride	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ
Xylenes (total)	ug/L	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ

Notes

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STL VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, and P-114
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility
Hicksville, NY

Compound	Units	Sample ID / Depth (feet below ground surface)								
		P-112 232.2 ft	P-112 240.2 ft	P-114 114.8 ft	P-114 124.8 ft	P-114 134.8 ft	P-114 143.8 ft	P-114 161.5 ft	P-114 193.8 ft	P-114 222.8 ft
1,1,1,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	0.92 J	1 U	0.45 J
1,1,1-Trichloroethane	ug/L	2.7	0.36 J	2.3	0.55 J	0.9 J	1.1	0.92 J	1.3	0.91 J
1,1,2,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.53 J	1 U
1,1-Dichloroethane	ug/L	0.42 J	1 U	3.9	3.7	3.7	3.8	5.2	13	4.2
1,1-Dichloroethene	ug/L	1.1	1 U	2.1	1.5	2.5	2.3	2.9	3.5	2.3
1,2-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	0.34 J	0.27 J	0.62 J	1 U	1 U
1,2-Dichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1 U	1 U	1 U	0.22 J	0.34 J	0.32 J	0.41 J	0.28 J	0.71 J
1,3-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	0.24 J	0.17 J	0.31 J	1 U	1 U
2-Butanone	ug/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
2-Hexanone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Benzene	ug/L	1 U	1 U	1 U	1 U	0.11 J	0.11 J	0.27 J	0.57 J	1.2
Bromodichloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/L	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Carbon disulfide	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	ug/L	1 U	1 U	1 U	1 U	0.26 J	0.28 J	0.4 J	1 U	1 U
Chloroethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	ug/L	0.27 J	0.15 J	0.32 J	0.76 J	1	0.93 J	0.75 J	0.97 J	2
Chloromethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	ug/L	0.94 J	7.1	9.4	20	81	72	120	200	24
cis-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/L	1 U	1 U	1 U	1 U	0.44 J	0.45 J	1 U	1	1 U
Styrene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/L	110	100	12	17	35	25	23	11	26
Toluene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1 U	0.36 J	1 U	1 U	0.74 J	0.63 J	0.82 J	2.3	0.34 J
trans-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/L	23	35	42	120	460	400	880	660	430
Vinyl chloride	ug/L	1 U	1 U	1 U	1 U	2.4	2.2	6.7	16	1.1
Xylenes (total)	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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STL VOC Data - Groundwater Profiles P-102, P-104, P-110, P-112, and P-114
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility
Hicksville, NY

Compound	Units	Sample ID / Depth (feet below ground surface)			
		P-114 271.9 ft	P-114 298.3 ft	P-114 74.1 ft	P-114 84.8 ft
1,1,1,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	ug/L	1.8	7.9	8.4	6.4
1,1,2,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1 U	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	20	31	1	0.87 J
1,1-Dichloroethene	ug/L	2.7	9.2	0.52 J	0.34 J
1,2-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1 U	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	0.16 J	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U
2-Butanone	ug/L	5 UJ	5 UJ	5 UJ	5 UJ
2-Hexanone	ug/L	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5 U	5 U	5 U	5 U
Acetone	ug/L	2 UJ	2 UJ	8.1UJ	2 UJ
Benzene	ug/L	0.27 J	0.14 J	1 U	1 U
Bromodichloromethane	ug/L	1 U	1 U	1 U	1 U
Bromoform	ug/L	1 U	1 U	1 U	1 U
Bromomethane	ug/L	2 UJ	2 UJ	2 UJ	2 UJ
Carbon disulfide	ug/L	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1 U	1 U	1 U	1 U
Chlorobenzene	ug/L	1 U	0.64 J	1 U	1 U
Chloroethane	ug/L	2 U	2 U	2 U	2 U
Chloroform	ug/L	0.31 J	0.66 J	1 U	1 U
Chloromethane	ug/L	2 U	2 U	0.15 J	2 U
cis-1,2-Dichloroethene	ug/L	23	28	1.3	1.2
cis-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/L	1 U	1 U	1 U	1 U
Ethylbenzene	ug/L	1 U	1 U	1 U	1 U
Methylene chloride	ug/L	1 U	1 U	1 U	1 U
Styrene	ug/L	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/L	8	4.1	1 U	1 U
Toluene	ug/L	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U
Trichloroethene	ug/L	180	120	9.2	7.6
Vinyl chloride	ug/L	0.92 J	1.4	1 U	1 U
Xylenes (total)	ug/L	1 U	1 U	1 U	1 U

Notes

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Boring ID:

MALCOLM PIRNIE, INC.

P-102

17-17 Route 208 North Fair Lawn, NJ 07401

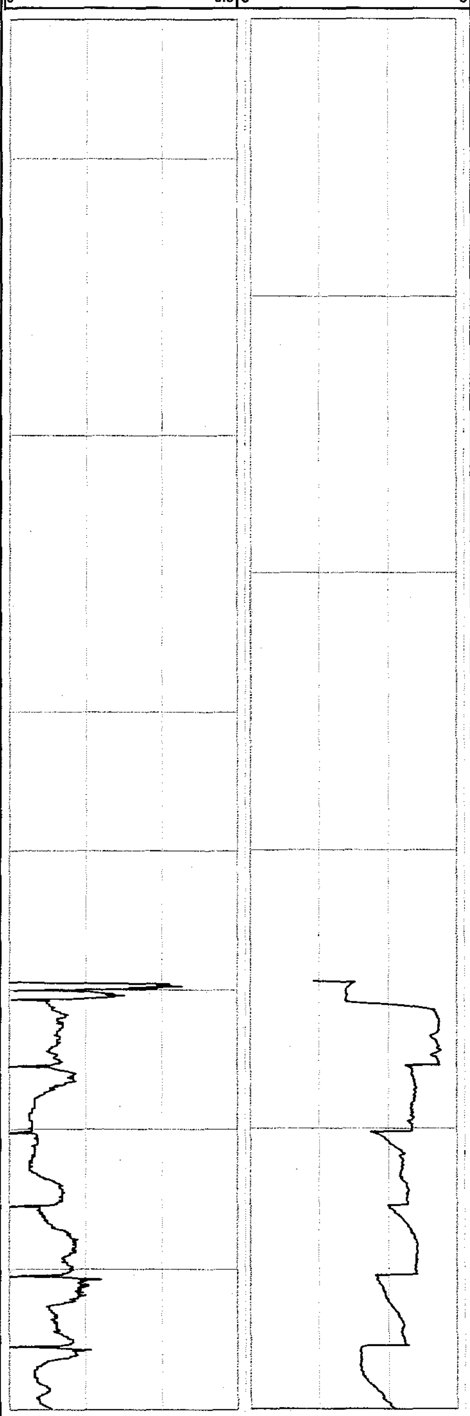
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 1, 2007
JOB NUMBER:	4563001	END DATE:	February 27, 2007
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 474.25

Total depth of boring: 420 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.9 | Index of Hyd. Conductivity 0 – 3



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
0	SAND (fine to coarse) and SILT with trace Gravel (fine); dark brown-black, sub-round.	SM		Hollow stem augers used from 0 to 20 ft
10	SAND (medium to coarse), little Gravel (fine); light-moderate brown.	SW		
20				Begin mud rotary drilling at 20 ft
30				
40				
50	SAND (fine to medium), trace Gravel (fine); light-moderate brown.	SW		
60				
				Begin profiling at 70.20 ft
70	SAND (fine to medium), trace Gravel (fine); white.	SW		
80				
90	SAND (fine to medium), trace Gravel (fine); light brown.	SW		

Boring ID:

MALCOLM PIRNIE, INC.

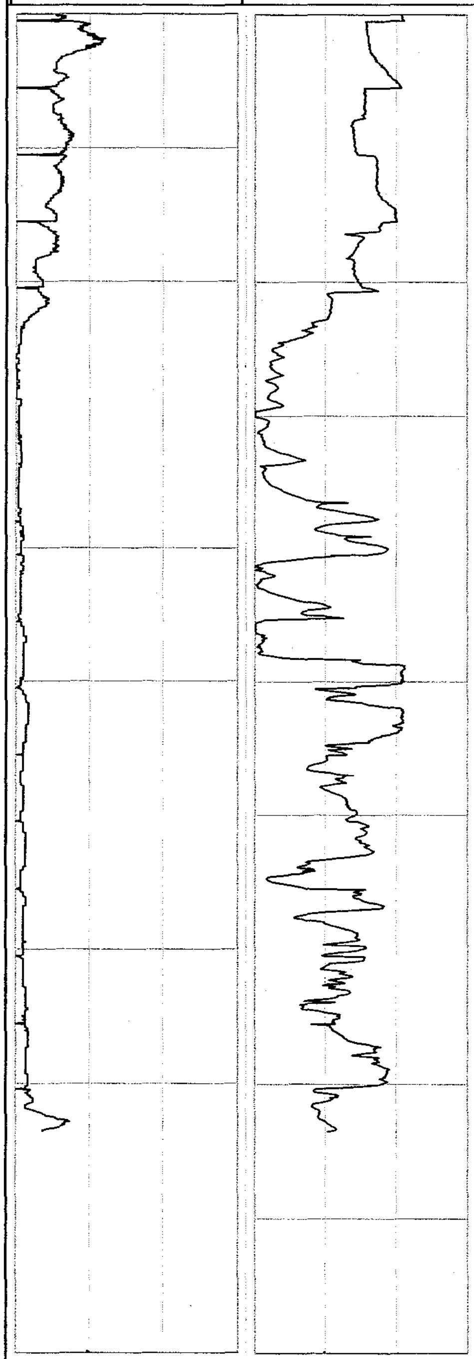
P-102

17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 1, 2007
JOB NUMBER:	4563001	END DATE:	February 27, 2007
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 474.25 — Total depth of boring: 420 ft

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
100	SAND (fine-coarse), little Gravel; light brown.	SW		
120	SAND (medium) with some Silt; moderate brown.	SP		
180	SAND (fine to coarse), with Silt and Clay; moderate brown	SM		Pulled Profiler at 180' bgs, advanced casing from 70' bgs to 180'
190	SAND (fine) and SILT, trace Clay; white.	SM		Pulled Profiler at 191' bgs. Problems with sample line. Advanced casing from 180' bgs to 200'

Depth scale: 100, 110, 120, 130, 140, 150, 160, 170, 180, 190

Boring ID:

P-102

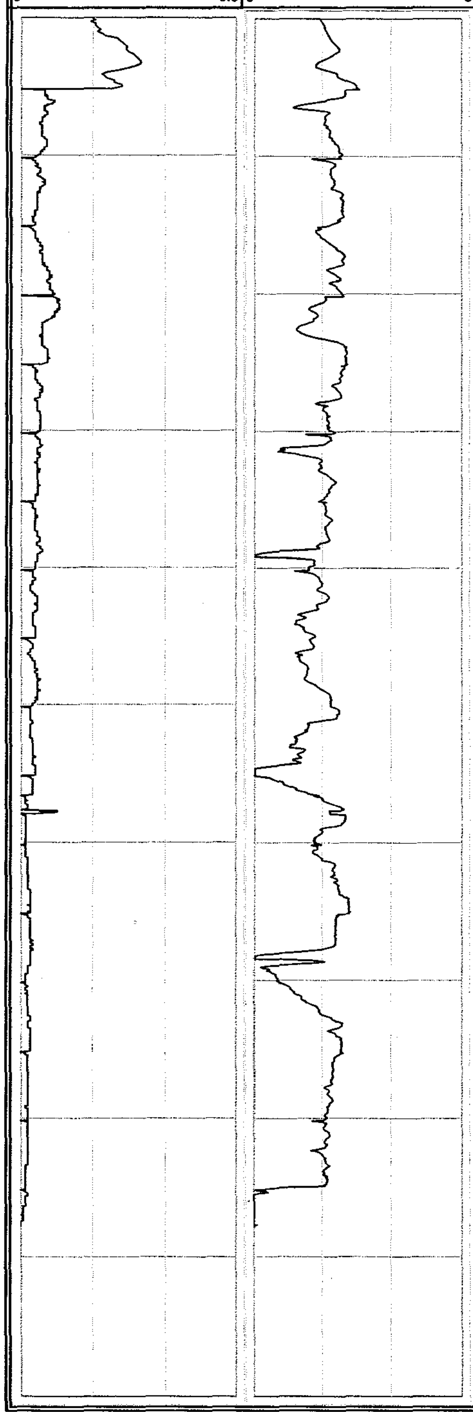
MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 1, 2007
JOB NUMBER:	4563001	END DATE:	February 27, 2007
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith
Total depth of Profile:	474.25	Total depth of boring:	420 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.9 | Index of Hyd. Conductivity 0 – 3



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
200	SAND (fine-coarse) with some Silt; moderate brown.	SM		
220	SAND (fine-medium) with some Silt; light brown.	SM		
250	SAND (fine-Medium) with some Clay; dark gray.	SC		
	SAND (fine); light brown.	SP		
260	SAND (fine-medium), some Clay and Silt; white.	SC		
270	SILT with Sand (fine); white.	ML-SM		
	CLAY with Sand (fine); gray-white.	CL		Mud loss. No cuttings return. Appears to be Clay from 284' to approx. 292' based on drilling character. Clay found on profiler indicated a stiff, gray-white clay. Refusal at 287' bgs. Profiler pulled out and advanced casing from 200' bgs to 290'
	SILT with Sand (fine); white.	ML-SM		

Depth scale: 200, 210, 220, 230, 240, 250, 260, 270, 280, 290

StratLogs 1-08.xls

Boring ID:

MALCOLM PIRNIE, INC.

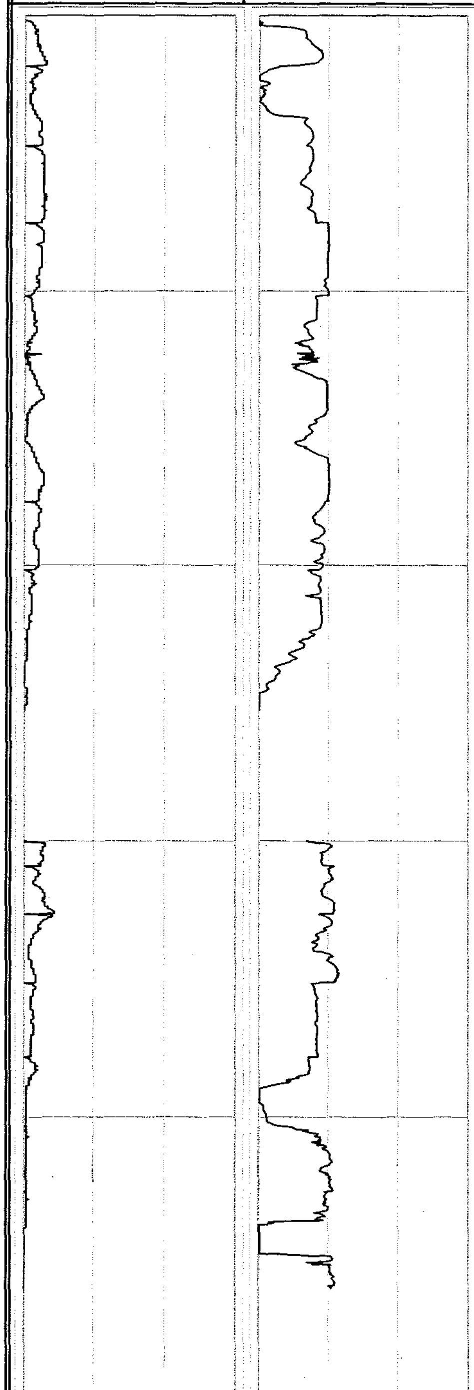
P-102

17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 1, 2007
JOB NUMBER:	4563001	END DATE:	February 27, 2007
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith
Total depth of Profile:	474.25	Total depth of boring:	420 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.9 | Index of Hyd. Conductivity 0 – 3



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
300	SAND (fine-medium) with trace Silt; light brown to white.	SW		
310				
320				
330	SAND (fine to medium), trace Silt and Clay interbeds; light brown to white.	SW		
340				
350	SAND (fine to medium), trace Silt and Clay; light brown to white, micaceous.	SW		Profiler refusal at 350.55' bgs, pulled rods and advanced casing from 290' bgs to 360'
360	SAND (fine to medium), trace Silt and Clay; light brown to white.	SW		
370				
380				
390	SAND (medium-coarse), trace Silt; gray to white, micaceous.	SW		Profiler refusal at 392.30' bgs, pulled rods and advanced casing from 360' bgs to 420'

Boring ID:

MALCOLM PIRNIE, INC.

P-102

17-17 Route 208 North Fair Lawn, NJ 07401

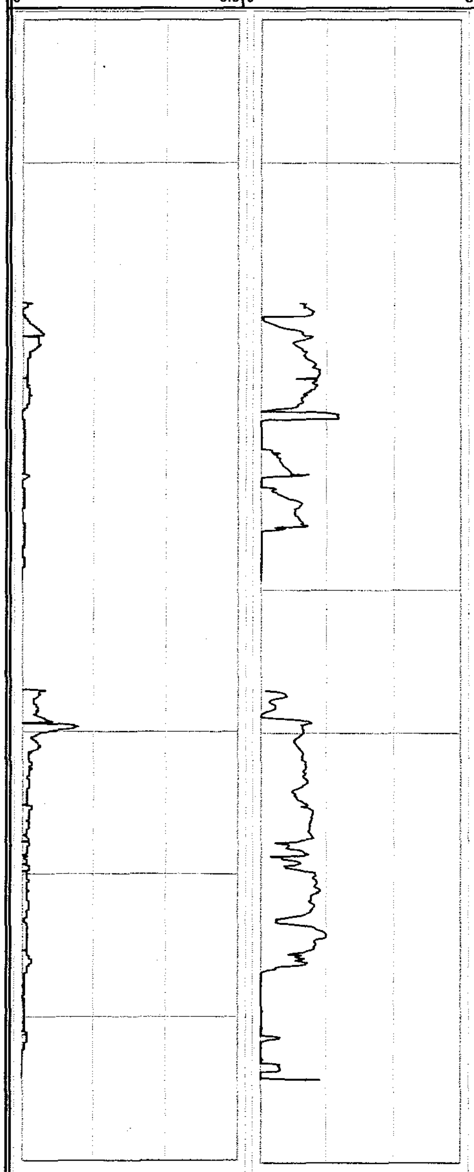
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 1, 2007
JOB NUMBER:	4563001	END DATE:	February 27, 2007
DRILLING FIRM:	SGS	LOCATION:	Intersection of Charlotte Ave. and Duffy Ave. on Winter Brothers property
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 474.25

Total depth of boring: 420 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.9 | Index of Hyd. Conductivity 0 – 3



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
400				
410	SAND (fine-coarse) with interbedded Silt and Clay; white to gray to gray-brown.	SW		
420				
430				Profiler refusal at 439.38' bgs, pulled rods and advanced casing from 420' bgs to 447'
440	SAND (fine-coarse), trace Silt; white to gray.	SW		End of mud logging at 447.15 ft
450				
460				
470				End of profile at 474.25 ft
480				
490				

StratLogs 1-08.xls

Boring ID:

MALCOLM PIRNIE, INC.

P-104

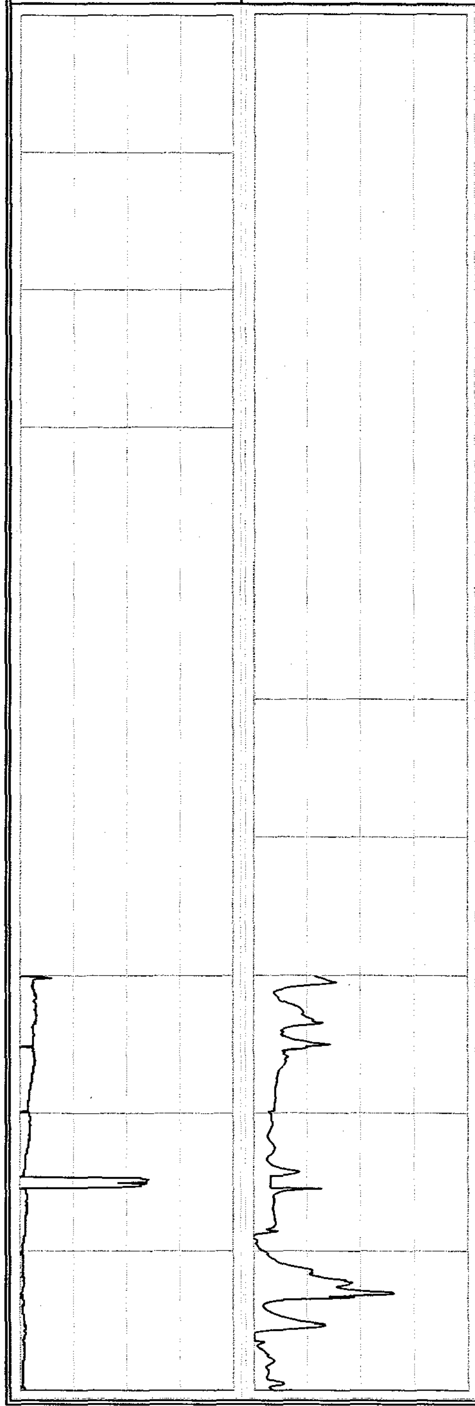
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 28, 2007
JOB NUMBER:	4563001	END DATE:	March 21, 2007
DRILLING FIRM:	SGS	LOCATION:	550 Old Country Road, northeast corner of parking lot
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 491.70 ft — Total depth of boring: 480 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 1.6 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
0	SAND (medium-coarse) w/ little sub-rounded white quartz Gravel (fine-coarse) to 2" dia., moderate-dark brown.	SW-GW		Hollow stem augers used from 0 to 20 ft
20	SAND (medium-coarse); light brown.	SW-GW		Begin mud rotary drilling at 20 ft
				Begin profiling at 69.70 ft
70	SAND (medium) with little Silt; gray to brown.	SM		
90	SAND (medium-coarse) with some Silt, trace Gravel; light brown.	SW-SM		

Boring ID:

MALCOLM PIRNIE, INC.

P-104

17-17 Route 208 North Fair Lawn, NJ 07401

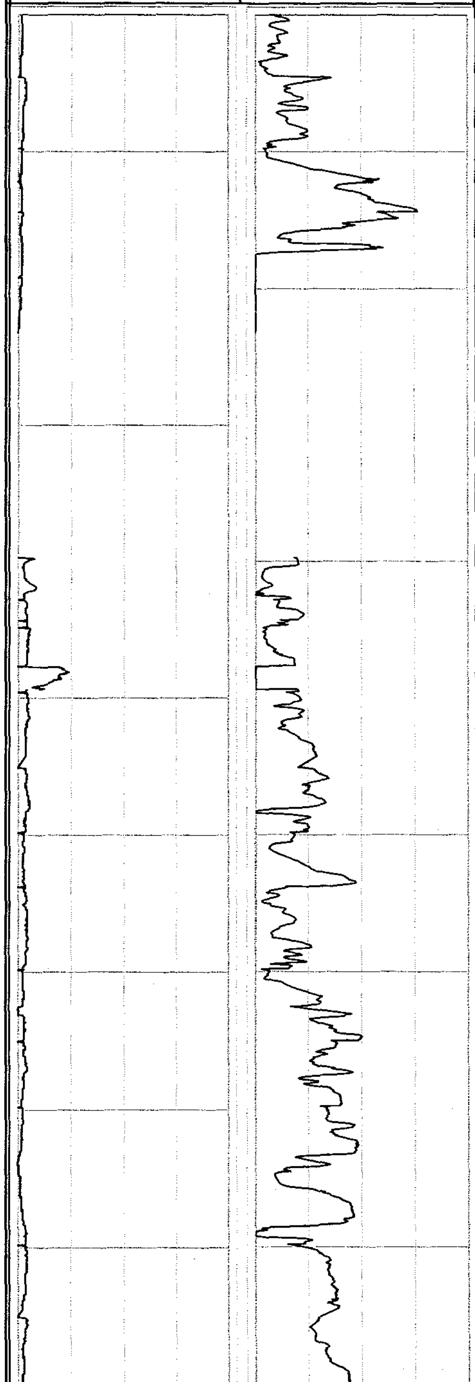
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 28, 2007
JOB NUMBER:	4563001	END DATE:	March 21, 2007
DRILLING FIRM:	SGS	LOCATION:	550 Old Country Road, northeast corner of parking lot
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 491.70 ft

Total depth of boring: 480 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 1.6 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
100				
110				
120	SAND (fine-medium) and SILT, w/ thin black carbonaceous clay and lignite interbeds (117 - 125' bgs); black.	SW-SM		Profiler refusal at 124' bgs, pulled rods and advanced casing from 70' bgs to 140'
130	SAND (medium-coarse) with some Silt; brown.	SW-SM		
140	SAND (fine) and SILT; gray to brown.	SM		
150	SAND (fine-coarse) with some Silt; brown.	SM		
160				
170	SAND (fine), trace Silt and Clay interbedded; brown to white.	SP		
180	SAND (fine) with Silt, some interbedded white Clay; brown to white.	SM		
190				

Boring ID:

MALCOLM PIRNIE, INC.

P-104

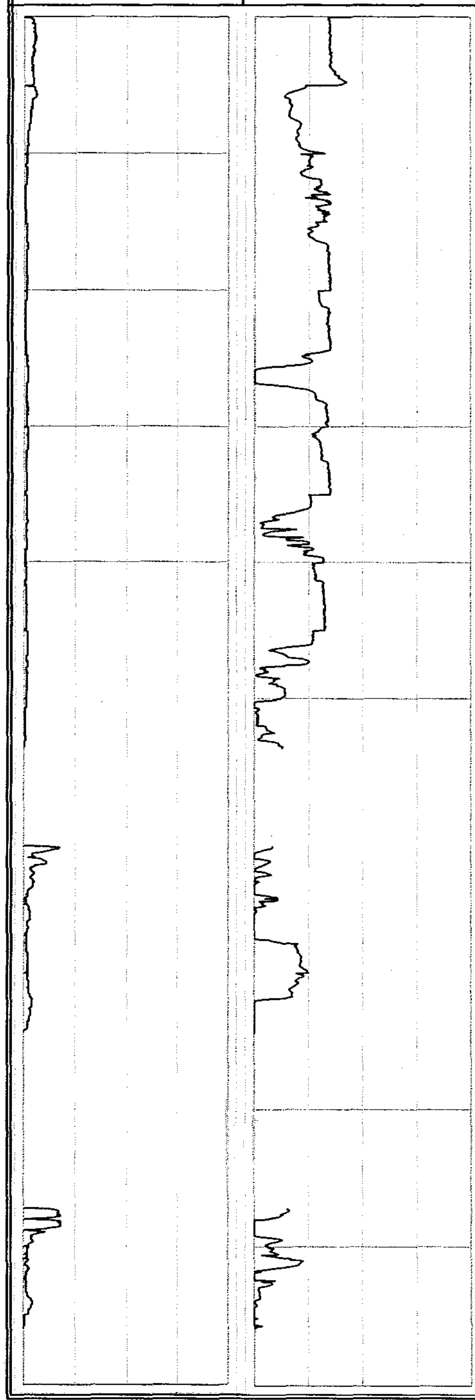
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 28, 2007
JOB NUMBER:	4563001	END DATE:	March 21, 2007
DRILLING FIRM:	SGS	LOCATION:	550 Old Country Road, northeast corner of parking lot
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 491.70 ft — Total depth of boring: 480 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 1.6 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
200	SAND (fine) with Silt, trace interbedded Clay; white.	SM		
210				
220	SAND (fine) and SILT, trace white interbedded Clay; brown to gray.	SM		
230				
240	SILT, some Sand (fine), trace interbedded carbonaceous Clay and lignite (272-278); gray to brown.	ML		
250				Pulled profiling rods from 253.65 and advanced casing from 140' to 260' bgs
260				
270				Profiler refusal at 274' bgs, pulled rods and advanced casing from 260' bgs to 287'
280				
290	SAND (fine) with little-some Silt, trace imterbedded Clay; light gray to brown.	SM		Profiler refusal at 296' bgs, pulled rods and advanced casing from 287' bgs to 312'

Boring ID:

MALCOLM PIRNIE, INC.

P-104

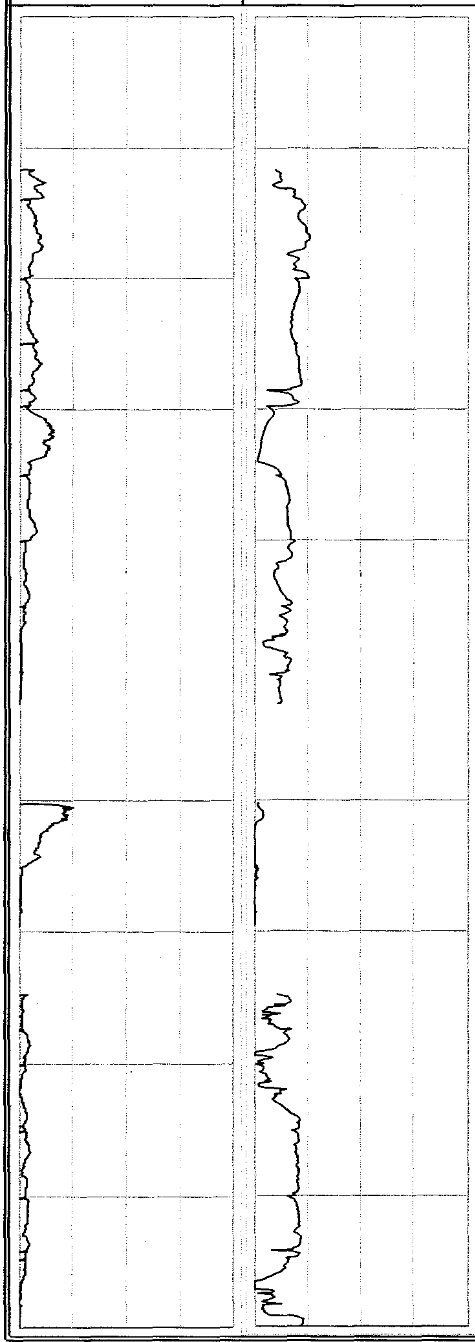
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 28, 2007
JOB NUMBER:	4563001	END DATE:	March 21, 2007
DRILLING FIRM:	SGS	LOCATION:	550 Old Country Road, northeast corner of parking lot
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 491.70 ft

Total depth of boring: 480 ft

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
300	SAND (fine) with little-some Silt; brown	SM		
310				
320				
330				
340				
350	SAND (fine-medium) with little-some Silt, trace interbedded Clay <.5'; light brown to white.	SM		Profiler refusal at 353' bgs, pulled rods and advanced casing from 312' bgs to 365'
360				
	SAND (fine-coarse) with little-some Silt, trace Clay; light brown to white.	SM		
370				Profiler refusal at 370' bgs, pulled rods and advanced casing from 365' bgs to 375'
	SAND (fine-coarse) with little-some Silt and dense angular Sand interbeds, trace Clay lenses <.5' thick; light brown to white.	SM		
380				
390				

Boring ID:

MALCOLM PIRNIE, INC.

P-104

17-17 Route 208 North Fair Lawn, NJ 07401

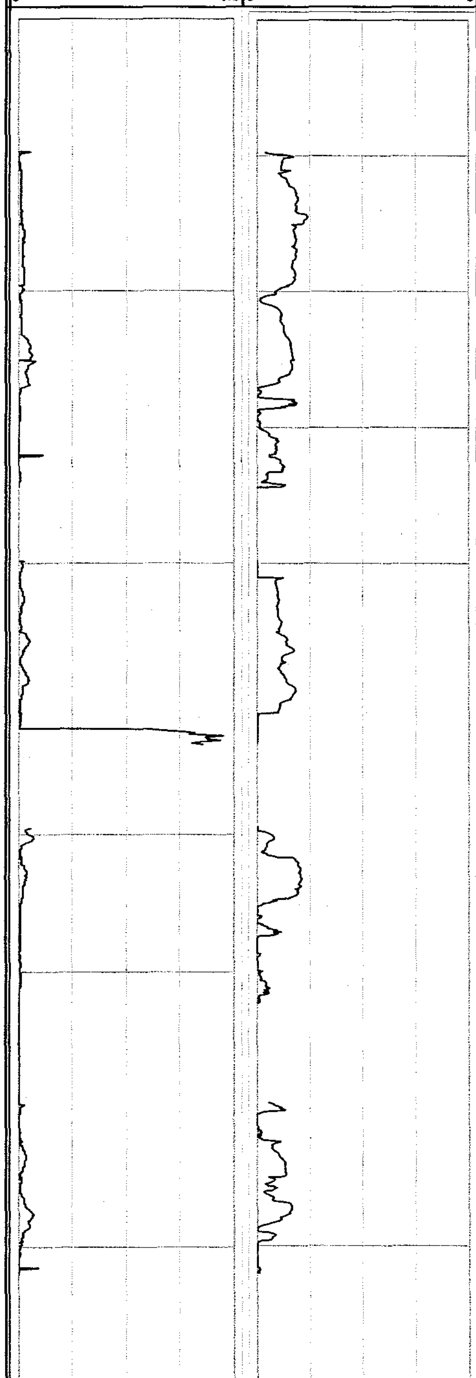
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	February 28, 2007
JOB NUMBER:	4563001	END DATE:	March 21, 2007
DRILLING FIRM:	SGS	LOCATION:	550 Old Country Road, northeast corner of parking lot
DRILLING METHOD:	Mud Rotary		
DRILLER:	Larry Lynch	DATUM:	Land Surface
HELPER:	Tom Lynch	LOGGED BY:	J. Hilton, C. Goldsmith

Total depth of Profile: 491.70 ft

Total depth of boring: 480 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 1.6 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
400				Profiler refusal at 400' bgs, pulled rods and advanced casing from 375' bgs to 410'
410	CLAY with interbedded carbonaceous lenses <0.5' thick; dark gray.	CL		
420				
430	SAND (fine-medium) and SILT, trace Clay interbeds <0.5' thick; light brown to white.	SM		Profiler malfunction at 435' bgs, pulled rods and advanced casing from 410' bgs to 440'
440	SAND (fine-medium), trace Clay; light brown to white.	SW		
450	SAND (fine-medium) and SILT, with dense stiff interbedded Clay at approx. 453-455; light brown to white.	SW-SM		Profiler refusal at 453' bgs, pulled rods and advanced casing from 440' bgs to 460'
460	SAND (fine), trace Clay; gray to white.	SP		
470	SAND (fine-medium) and SILT, trace interbedded gray-white Clay esp.at 472-473'; gray to white.	SW-SM		Profiler refusal at 472' bgs, pulled rods and advanced casing from 460' bgs to 480'
480				End of mud logging at 480.0 ft
490				End of profile at 491.70 ft Profiler refusal at 492' bgs, pulled rods and casing to abandon borehole P-104

Boring ID:

MALCOLM PIRNIE, INC.

P-110

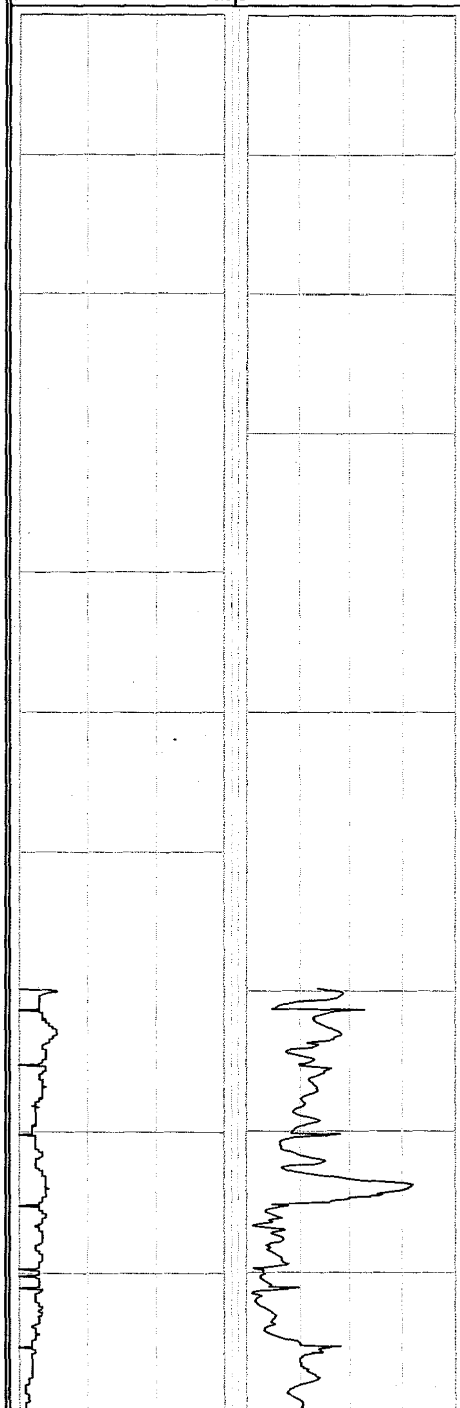
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	June 13, 2007
JOB NUMBER:	4563001	END DATE:	July 3, 2007
DRILLING FIRM:	SGS	LOCATION:	West of Levittown park and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 513.35 ft. Total depth of boring: 510 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
0	SAND (fine-coarse) w/ little sub-rounded white quartz Gravel (fine-coarse) to 2" dia.; light-moderate gray-brown.	SW		Hollow stem augers advanced from 0 to 20 ft bgs
	SAND (fine to medium) w/ little-some fine-crs sub-rnd Gravel 1/4-1/2"dia.; light tan-brown,	SW		
10				
20	SAND (medium-coarse); light brown.	SW		Begin mud rotary drilling at 20 ft
30				
40				
50				
60	SAND (fine-medium); light tan-brown.	SW		
	SAND (fine) with trace interbedded white Silt; light. tan-pink.	SP		Begin profiling at 69.75 ft
70				
80	SAND (fine) with red-brown Silt , trace Clay; light gray-brown.	SM		
90	SAND (fine-med) with trace Silt; light tan, micaceous.	SW		

Boring ID:

MALCOLM PIRNIE, INC.

P-110

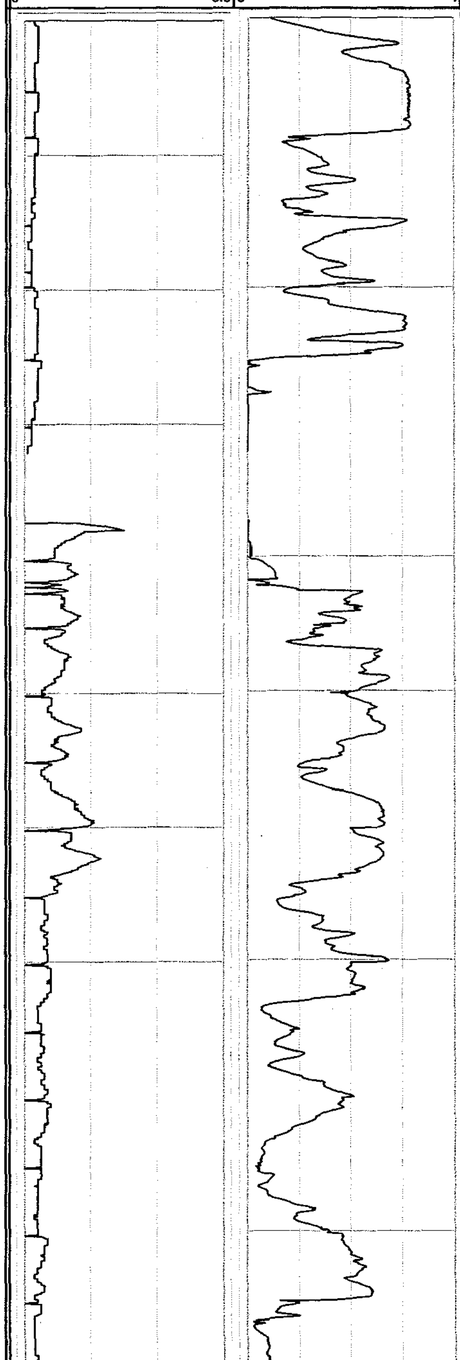
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	June 13, 2007
JOB NUMBER:	4563001	END DATE:	July 3, 2007
DRILLING FIRM:	SGS	LOCATION:	West of Levittown park and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 513.35 ft. Total depth of boring: 510 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
100				
110				
120				
	SILT and CLAY, dark gray-black, carbonaceous, with interbedded lignite <0.5' thick	ML-CL		
130				Profiler refusal at 132' bgs, pulled rods and advanced casing from 70' bgs to 140'. Start Profiler at 137.25.
140	SAND (fine); light gray-white, micaceous.	SP		
150				
160	SAND (fine) w/ trace-little Silt; light tan, micaceous.	SM		
170				
180				
190				

StratLogs 1-08.xls

Boring ID:

MALCOLM PIRNIE, INC.

P-112

17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 7, 2007
JOB NUMBER:	4563001	END DATE:	May 20, 2007
DRILLING FIRM:	SGS	LOCATION:	Stop and Shop parking lot North of Old Country Road
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton
Total depth of Profile:	443 ft.	Total depth of boring:	425 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 2 | Index of Hyd. Conductivity 0 – 6

Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
200	SILT and SAND (fine); brown.	ML-SM		Profiler refusal at 201' bgs, pulled rods and advanced casing from 150' bgs to 210'
210				
220	SILT and SAND (fine-medium) trace Clay; brown.	ML-SM		
230				
240	SAND (fine-medium) with some Gravel; tan-brown.	SW		
250	SAND (fine-medium) and SILT, with trace Gravel; tan-brown.	SM		
260	SAND (fine-medium) with some Silt; tan-brown.	SM		
270	CLAY, gray-white gradational to dark gray with interbedded lignite and carbonaceous Clay 290 - 300'.	CL		Profiler refusal at 272' bgs, pulled rods and advanced casing from 230' bgs to 300'
280				
290				

Boring ID:

P-110

MALCOLM PIRNIE, INC.

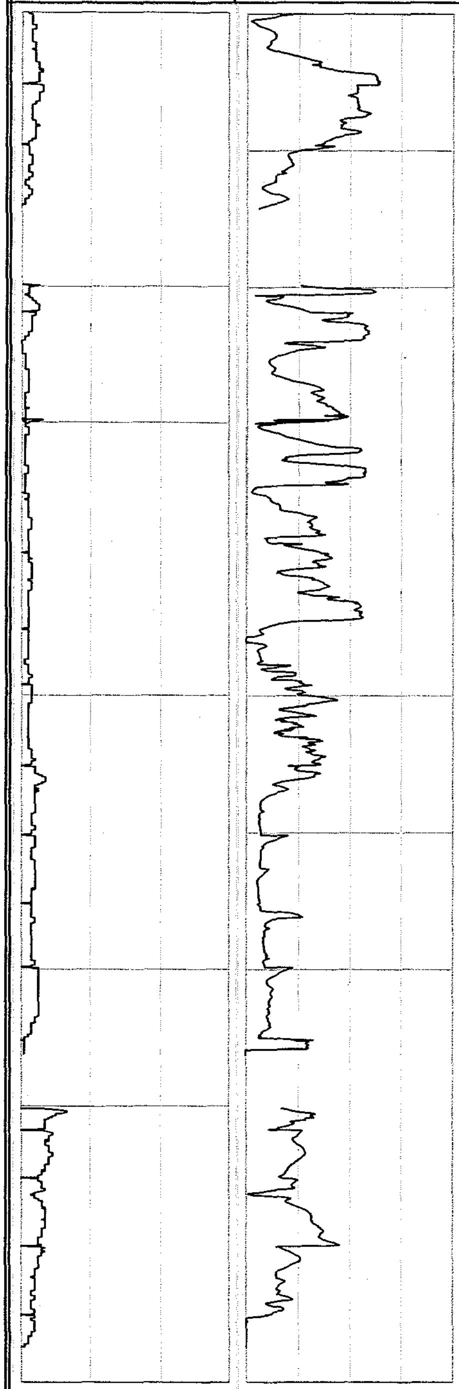
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	June 13, 2007
JOB NUMBER:	4563001	END DATE:	July 3, 2007
DRILLING FIRM:	SGS	LOCATION:	West of Levittown park and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 513.35 ft. | Total depth of boring: 510 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
200				
210				
220				Profiler tripped out at 215' bgs, pulled rods and advanced casing from 140' bgs to 220'
230				
240				
250				
260	SAND (fine) with little-some Silt, trace Clay; light gray-white, micaceous.	SM		
270				Profiler refusal at 276.2' bgs, pulled rods and advanced casing from 220' bgs to 280'
280	SAND (fine) with interbedded Silt lenses, trace Clay; light gray-white.	SP		
290				
	SAND, gray-white with little to some interbedded white Silt.	SM		

StratLogs 1-08.xls

Boring ID:

MALCOLM PIRNIE, INC.

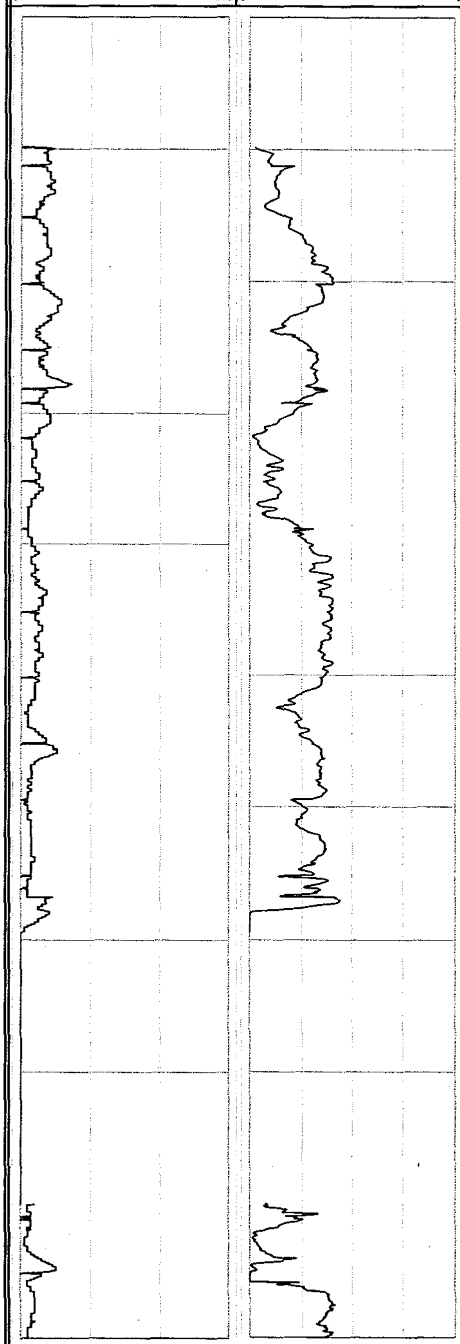
P-110

17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	June 13, 2007
JOB NUMBER:	4563001	END DATE:	July 3, 2007
DRILLING FIRM:	SGS	LOCATION:	West of Levittown park and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton
Total depth of Profile:	513.35 ft.	Total depth of boring:	510 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
300	SILT, white with little fine Sand, micaceous.	ML		Profiler refusal at 297.5' bgs, pulled rods and advanced casing from 280' bgs to 310'
310	SAND (fine); light gray-white.	SP		
320				
330	SAND (fine) with trace Silt; light gray-white to dark gray.	SP		
340	SAND (medium); gray-white.	SP		
350	SAND (fine-medium); light brown-white.	SW		
360				
	CLAY and SILT, dark gray, trace carbonaceous interbeds grading to white interbedded Silt at approx. 382'	CL-ML		
370				Profiler refusal at 369.5' bgs, pulled rods and advanced casing from 310' bgs to 390'
380				
	SAND (fine-medium); light tan-white.	SW		
390	SAND (fine-medium) with Silt, trace Clay; light tan-white.	SM		

MALCOLM PIRNIE, INC.

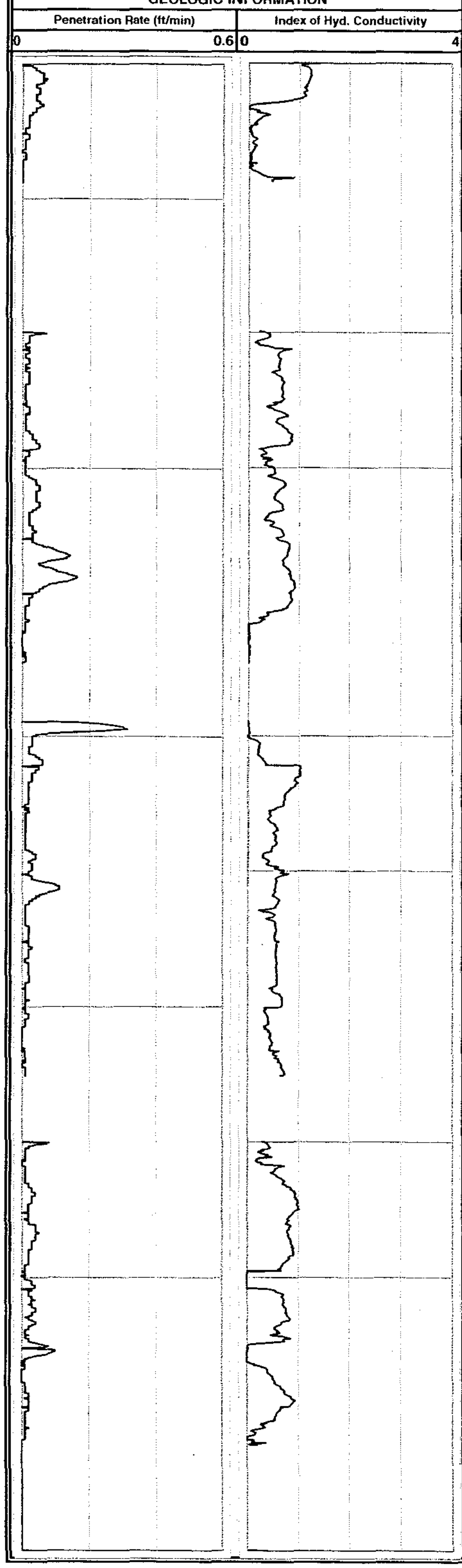
17-17 Route 208 North Fair Lawn, NJ 07401

Boring ID: **P-110**

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	June 13, 2007
JOB NUMBER:	4563001	END DATE:	July 3, 2007
DRILLING FIRM:	SGS	LOCATION:	West of Levittown park and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 513.35 ft.   Total depth of boring: 510 ft.

GEOLOGIC INFORMATION



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
400	SAND (medium) with trace Silt; light brown, angular.	SP		
410	CLAY dark gray, with interbedded carbonaceous lenses <0.5' thick.			Profiler refusal at 408.8' bgs, pulled rods and advanced casing from 390' bgs to 420'
420	SAND (fine-medium); light brown, angular.	SW		
430	SAND (medium) with interbedded Silt; white, angular.	SP		
440	SILT with little some Clay, grading to Sand (fine) at approximately 448' bgs; white.	ML		Profiler refusal at 444.5' bgs, pulled rods and advanced casing from 420' bgs to 450'
450	SAND (fine-medium) with trace-little Silt; light gray-white.	SW		
460				
470	SAND (fine-coarse) with trace-little Silt; white.	SW		Profiler advancement made difficult due to angular sand, advanced casing from 450' bgs to 480'
480	SAND (fine-coarse) with trace-little Silt; white .	SW		
490				
500	SAND (fine-medium) with little Silt; white	SW		Profiler refusal at 502.3' bgs, pulled rods and advanced casing from 480' bgs to 510' End of mud logging at 510 ft End of profile at 513.35 ft

Boring ID:

MALCOLM PIRNIE, INC.

P-112

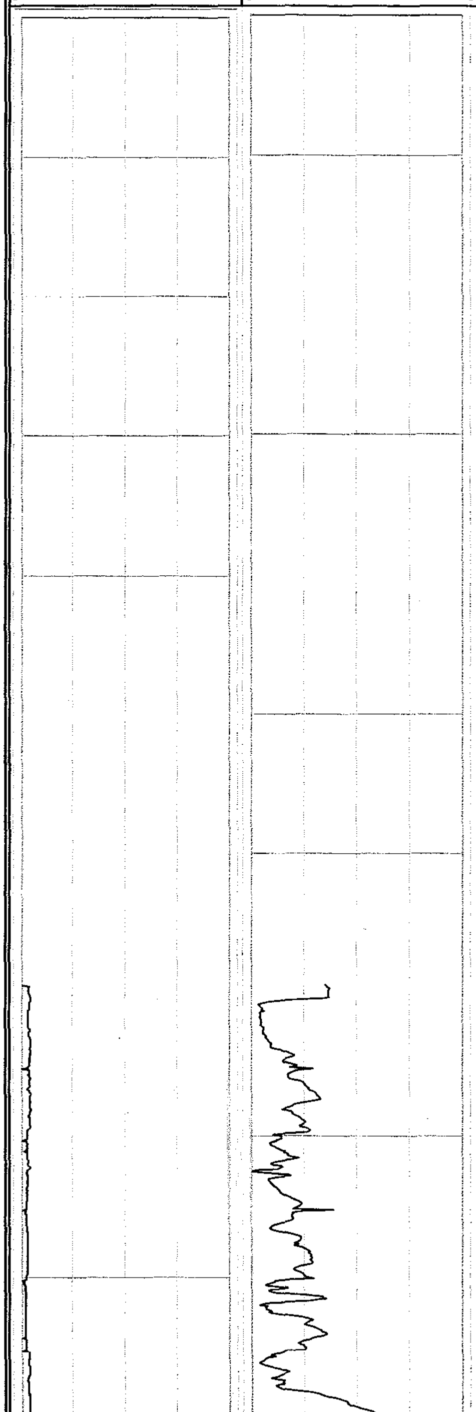
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	**START DATE:**	May 7, 2007
JOB NUMBER:	4563001	**END DATE:**	May 20, 2007
DRILLING FIRM:	SGS	**LOCATION:**	Stop and Shop parking lot North of Old Country Road
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	**DATUM:**	Land Surface
HELPER:	Julio Cancel	**LOGGED BY:**	J. Hilton

Total depth of Profile: 443 ft. Total depth of boring: 425 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 2 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
0	SAND (fine-medium) with trace-little quartz Gravel (fine-coarse) to 2" diameter., moderate brown to white, sub-rounded.	SW		Asphalt 0.0-0.5, Hollow stem augers advanced from 0 to 20 ft bgs
10				
20	SAND (medium-coarse) with little-some Gravel (fine); light brown, sub-round.	SW		Begin mud rotary drilling at 20 ft
30				
40				
50	SAND (fine-medium) and GRAVEL (fine) with sub-roundnd Gravel to 1/4 -1/2" dia.; light brown.	SW		
60	SAND and GRAVEL; same as above with moderate brown silt interbeds 1-2' thick.	SW		
				Begin profiling at 69.25 ft
70	SAND (fine-medium) with interbedded silt < 1' thick; moderate Brown-gray to light gray, micaceous.	SW		
80				
90	SAND (fine-medium) and SILT, with interbedded oxidized silt <1' thick, trace Clay; gray-brown;	SM		

StratLogs 1-08.xls

Boring ID:

P-112

MALCOLM PIRNIE, INC.

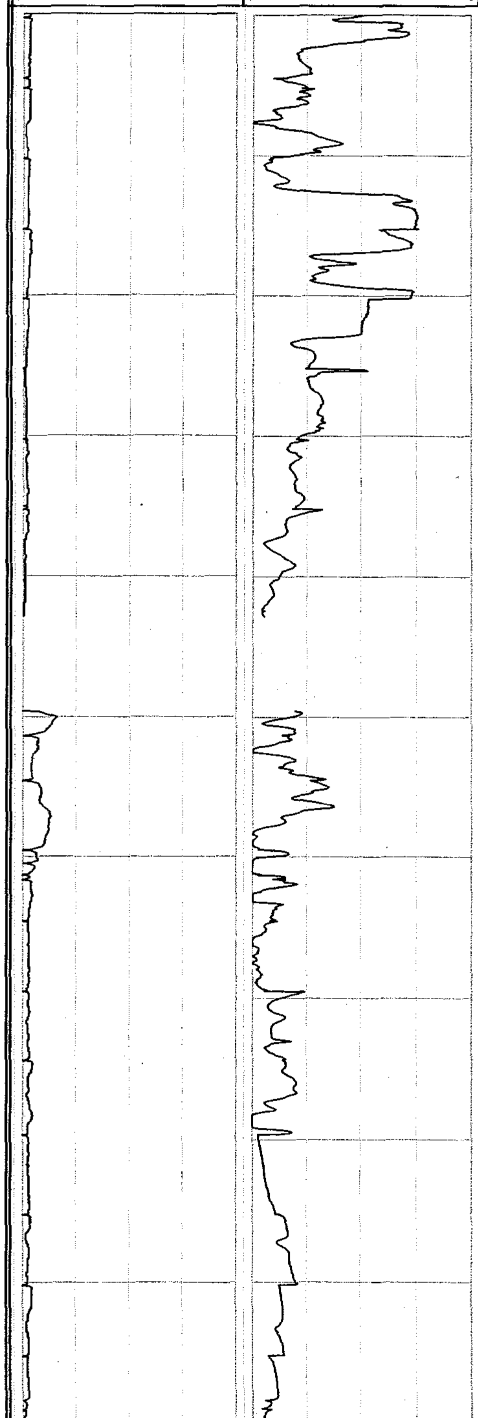
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 7, 2007
JOB NUMBER:	4563001	END DATE:	May 20, 2007
DRILLING FIRM:	SGS	LOCATION:	Stop and Shop parking lot North of Old Country Road
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 443 ft. Total depth of boring: 425 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 2; Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
100				
110				
120	SAND (fine); light brown.	SP		
130	SAND (fine) and SILT, trace Clay with in Silt matrix; light gray-brown.	SM		
140				Profiler refusal at 143' bgs, pulled rods and advanced casing from 70' bgs to 150'
150				
160	SILT, with some Sand (fine); gray-brown.	ML		
170				
180				
190				

Boring ID:

MALCOLM PIRNIE, INC.

P-112

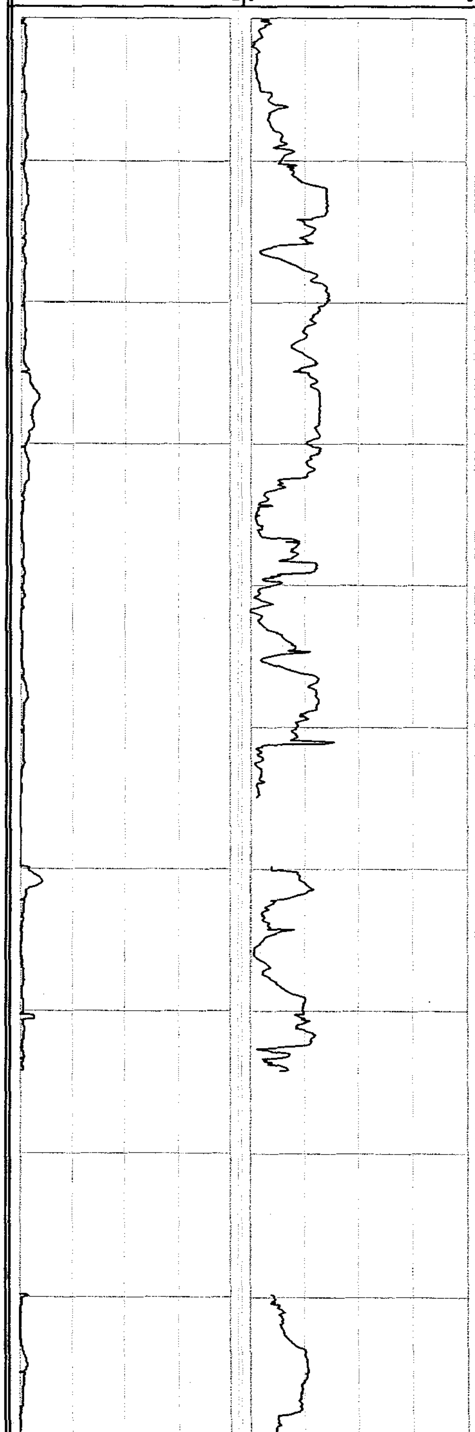
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 7, 2007
JOB NUMBER:	4563001	END DATE:	May 20, 2007
DRILLING FIRM:	SGS	LOCATION:	Stop and Shop parking lot North of Old Country Road
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 443 ft. Total depth of boring: 425 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 2; Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
300	SILT and SAND (fine) with trace carbonaceous Clay; moderate-dark gray.	ML-SM		
310	SAND (fine-medium) with trace-little gray-brown Silt; gray-white.	SW		
320	SAND (fine) with tan-brown interbedded Silt; gray-white.	SP		
350	SILT, with stratified fine Sand and Clay; lt. gray-white.	ML		Profiler refusal at 355' bgs, pulled rods and advanced casing from 300' bgs to 360'
360	SAND (fine) with interbedded Silt; lt. gray-white.	SP		
	SILT, with interbedded Clay lenses <1' thick; white-gray,stiff, dense.	ML-CL		Profiler reed valve malfunction at 374.2, pulled rods and advanced casing from 360' bgs to 390'
	SAND (fine) with Silt; tan-gray.	SM		
390	SAND (medium-coarse) w/ trace yellow-brwn Silt; white-gray, angular.	SW		

Depth scale: 300, 310, 320, 330, 340, 350, 360, 370, 380, 390

StratLogs 1-08.xls

Boring ID:

MALCOLM PIRNIE, INC.

P-112

17-17 Route 208 North Fair Lawn, NJ 07401

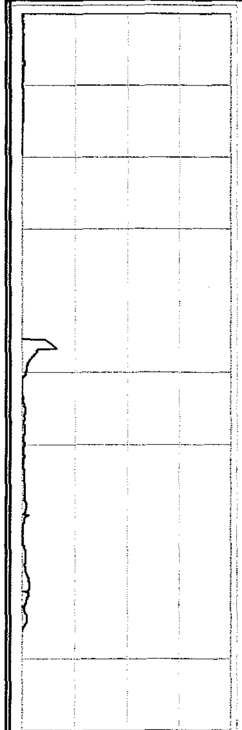
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 7, 2007
JOB NUMBER:	4563001	END DATE:	May 20, 2007
DRILLING FIRM:	SGS	LOCATION:	Stop and Shop parking lot North of Old Country Road
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 443 ft.

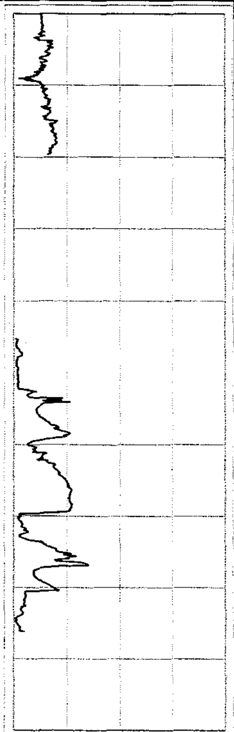
Total depth of boring: 425 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 2



Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
400				
410	CLAY and SILT, with interbedded Silt and Sand (fine); dark gray-black, carbonaceous,soft.	CL-ML		Profiler advancement difficult at 410- 420' interval, pulled rods and advanced casing from 390' bgs to 425'
420				End of mud logging at 425 ft
430				
440				Profiler refusal at 443' bgs, pulled rods and terminated borehole advancement
450				End of profile at 443 ft
460				
470				
480				
490				

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

Boring ID: **P-113**

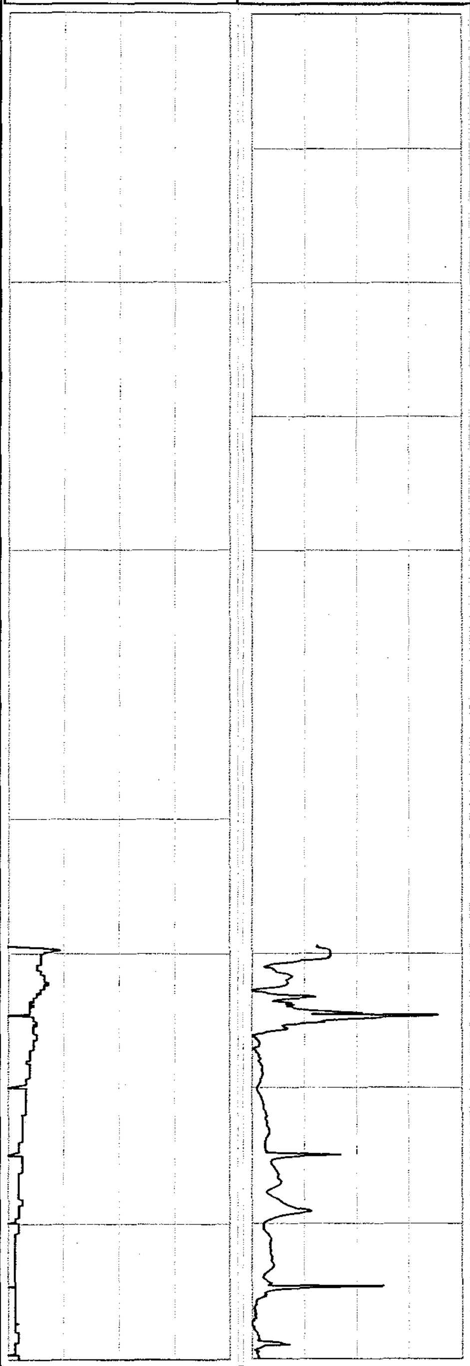
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 29, 2007
JOB NUMBER:	4563001	END DATE:	June 7, 2007
DRILLING FIRM:	SGS	LOCATION:	Southwest corner of intersection of Levittown Pkwy and Old Country Road.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 389.9 ft.

Total depth of boring:

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description		Stratigraphic Column	REMARKS
0	SAND (medium-coarse) and GRAVEL; brown, sub-rounded, white quartz Gravel to 1" diameter.	SW		Hollow stem augers advanced from 0 to 20 ft bgs
10				
20	GRAVEL (fine) with some Sand (fine-medium); brown, sub-round.	GP		Begin mud rotary drilling at 20 ft
30	SAND (medium-coarse) and GRAVEL (fine); light brown, sub-round Gravel 1/4-1/2"diameter.	SW-GP		
40				
50	SAND (medium-coarse) with little-some Gravel (Fine); gray-brown, sub-round.	SW		
60	SAND (fine-medium) with little Gravel (fine); gray-brown, sub-round.	SW		
	SAND (fine-medium) and SILT; light tan-brown.	SM		Begin profiling at 69.35 ft
70	SAND (fine) and SILT; light tan-gray.	SM		
80	SILT with little fine interbedded Sand < 1' thick; light brown.	ML		
90	SILT and SAND (fine) with trace white Clay; light gray-brown.	SM		

Boring ID:

MALCOLM PIRNIE, INC.

P-113

17-17 Route 208 North Fair Lawn, NJ 07401

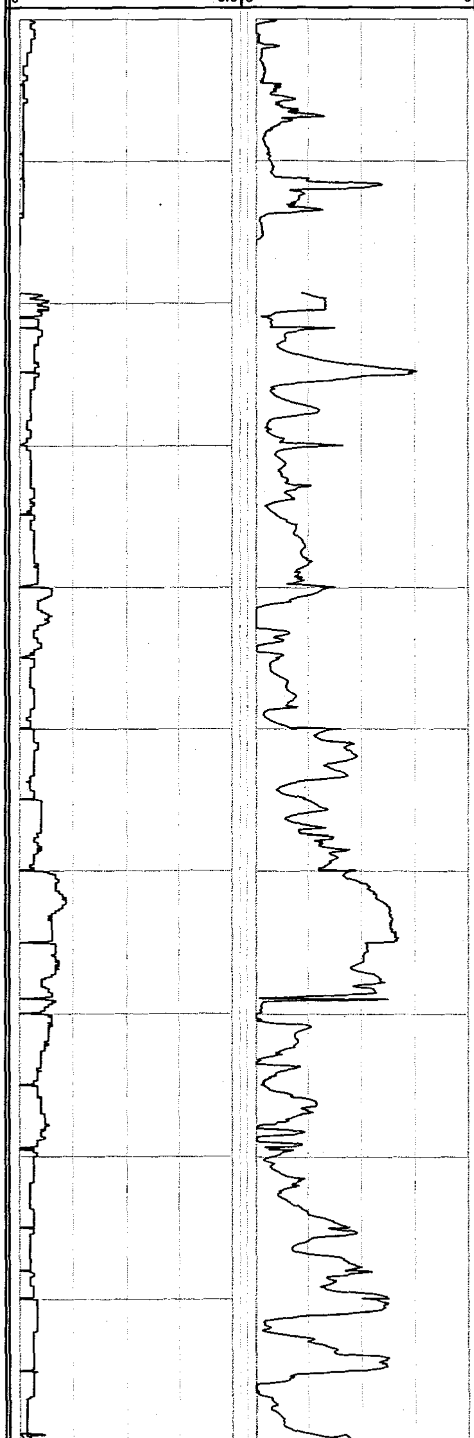
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 29, 2007
JOB NUMBER:	4563001	END DATE:	June 7, 2007
DRILLING FIRM:	SGS	LOCATION:	Southwest corner of intersection of Levittown Pkwy and Old Country Road.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 389.9 ft.

Total depth of boring:

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6; Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description		Stratigraphic Column	REMARKS
100				
110	SAND (fine) and SILT, with stiff Clay lens; gray-white to dark brown.	SM		
120	SAND (fine) with little interbedded Silt (1-3'), trace Gravel (fine); light tan-brown.	SP		Profiler refusal at 116' bgs, pulled rods and advanced casing from 70' bgs to 120'
130				
140				
150				
160	SAND (fine); light tan-brown, with black, carbonaceous Silty-Clay interbed <1' thick.	SP		
170	SAND (fine) with little - some Silt; light tan-brown.	SP		
180				
190	SILT, with little fine Sand, trace-little Clay with in Silt matrix; brown - yellow.	ML		

Boring ID:

P-113

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

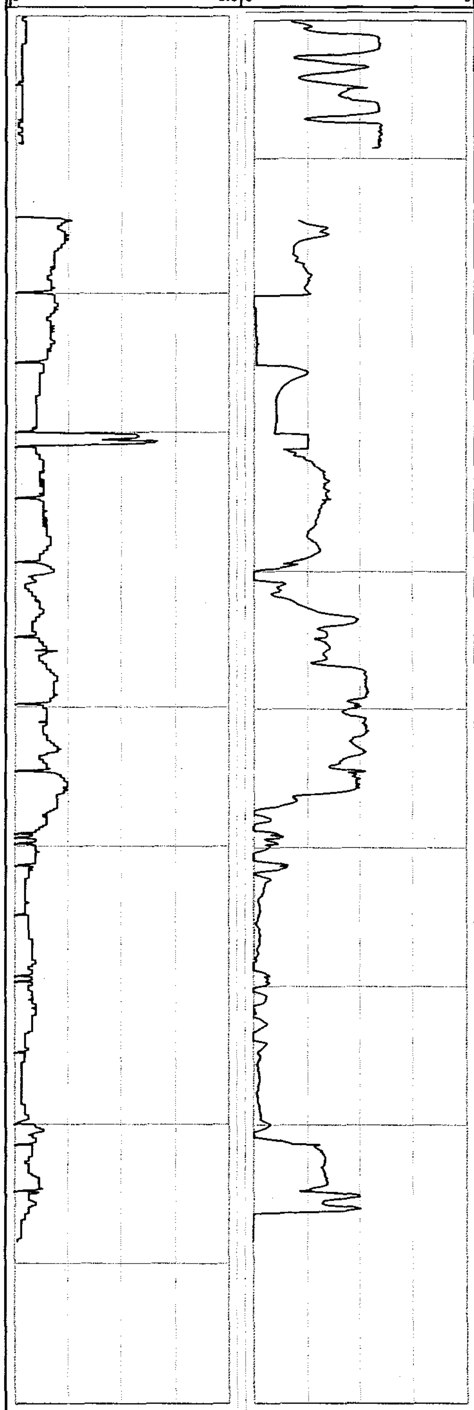
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 29, 2007
JOB NUMBER:	4563001	END DATE:	June 7, 2007
DRILLING FIRM:	SGS	LOCATION:	Southwest corner of intersection of Levittown Pkwy and Old Country Road.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 389.9 ft.

Total depth of boring:

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description		Stratigraphic Column	REMARKS
200	Sand (fine) with trace - little silt; light tan.	SP		
210				Pulled rods and advanced casing from 70' bgs to 215'
220	SAND (fine) and SILT, with interbedded Sand/Silt lenses; light gray.	SM		
230				
240				
250	SILT, with trace-little Sand (fine); light gray-brown.	ML		
260				
270	SILT, with trace Sand (fine); dark gray.	ML		
280				
	CLAY; dark gray-black, carbonaceous with interbedded lignite <1' thick.	CL		Profiler refusal at 286.4' bgs, pulled rods and advanced casing from 215' bgs to 330'
290				

Boring ID:

MALCOLM PIRNIE, INC.

P-113

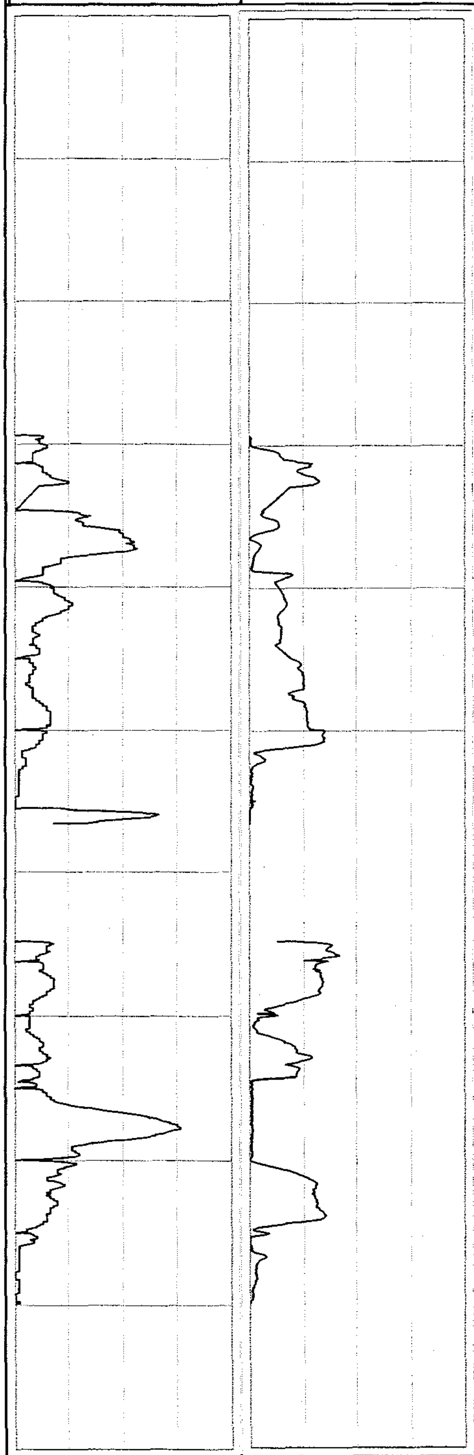
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 29, 2007
JOB NUMBER:	4563001	END DATE:	June 7, 2007
DRILLING FIRM:	SGS	LOCATION:	Southwest corner of intersection of Levittown Pkwy and Old Country Road.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 389.9 ft. Total depth of boring:

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	Description		Stratigraphic Column	REMARKS
300	CLAY; light gray, soft.	CL		
310	CLAY, with stiff, dense interbedded clay fabric; moderate-dark gray.	CL		
320				
330	SAND (fine); moderate gray-brown, micaceous.	SP		Profiling pump malfunction, pulled rods and advanced casing from 330' bgs to 335'
340	SAND (medium-coarse); gray-white.	SW		
350	SILT; with black carbonaceous Clay, trace fine Sand (fine); gray-white.	ML		Profiler refusal at 356.55' bgs, pulled rods and advanced casing from 335' bgs to 365'
360				
370				
380				
390				Profiler refusal at 389.9' bgs, pulled rods and terminated borehole advancement End of mud logging at 365 ft End of profile at 389.9 ft

Boring ID:

MALCOLM PIRNIE, INC.

P-114

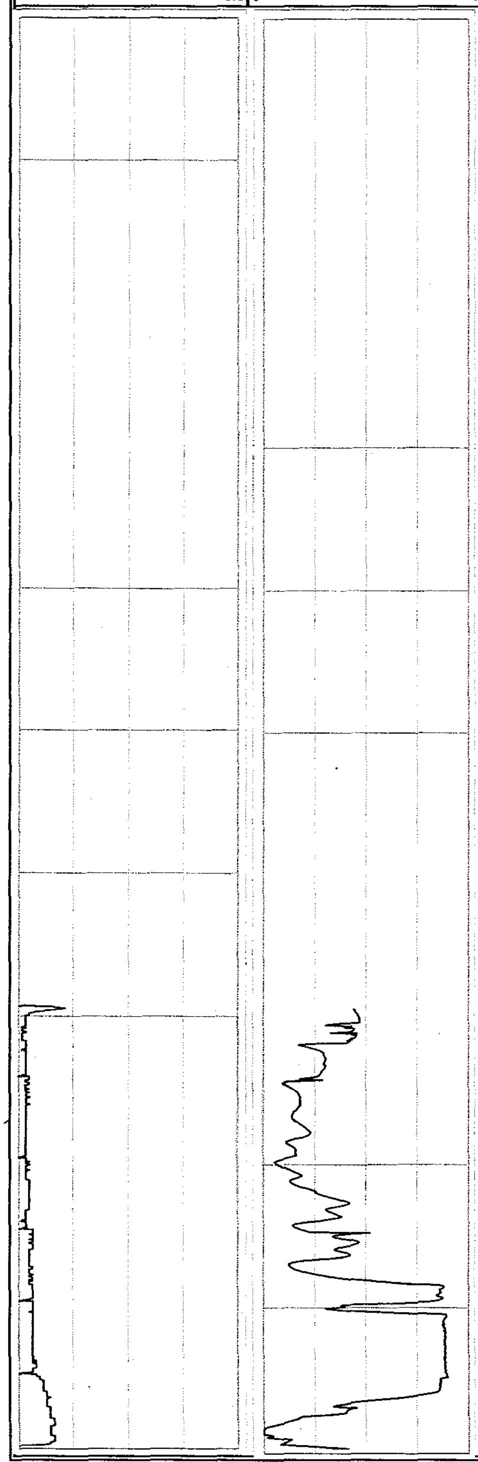
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	July 11, 2007
JOB NUMBER:	4563001	END DATE:	July 28, 2007
DRILLING FIRM:	SGS	LOCATION:	Levittown park between Levittown Pkwy and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 523.9 ft. | Total depth of boring: 455 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
0	SAND (medium-coarse) with little white quartz Gravel (fine-coarse) to 2" diameter, moderate-dark brown, sub-round.	SW		Hollow stem augers advanced from 0 to 20 ft bgs
10	SAND (medium-coarse) with some sub-round gravel (coarse) and cobbles to 3" diameter.	SW		
20	SAND (medium-coarse); light brown.	SW		Begin mud rotary drilling at 20 ft
30	SAND (coarse) and GRAVEL (coarse), with Gravel (fine) to 1/2' diameter; light brown, sub-round.	SP		
40				
50	SAND (medium-coarse) with trace-little fine white quartz Gravel; light tan-white.	SW		
60				
				Begin profiling at 69.2 ft
70	SAND (fine-medium) with trace interbedded white Silt; light tan-pink.	SW		
80				
	SAND (medium) and SILT, with pink-white Silt , trace Gravel (fine); yellow-brown.	SM		
90				

Boring ID:

P-114

MALCOLM PIRNIE, INC.

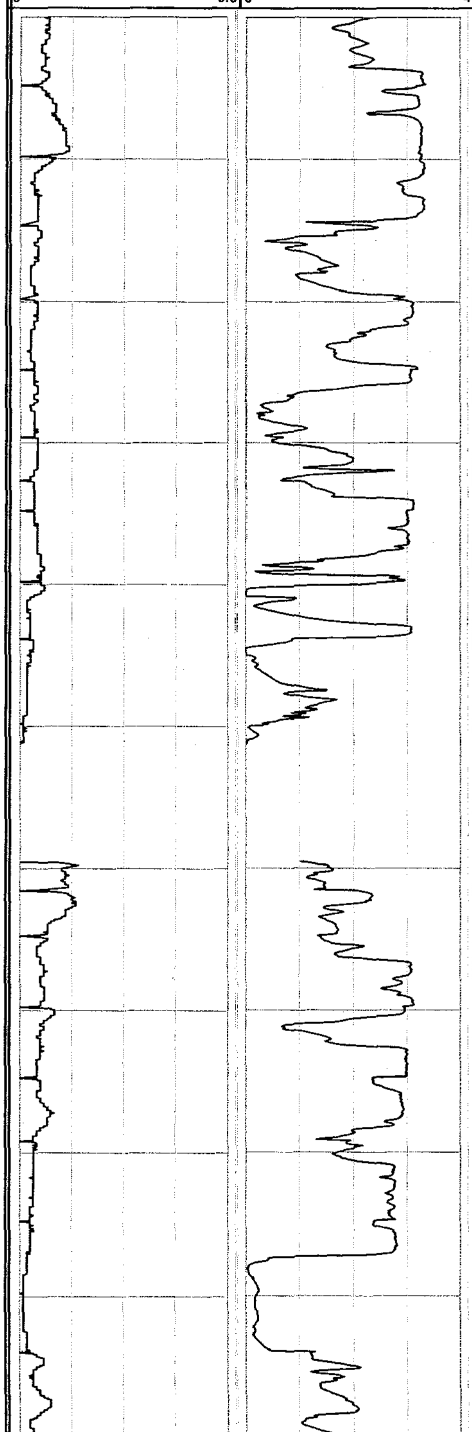
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	July 11, 2007
JOB NUMBER:	4563001	END DATE:	July 28, 2007
DRILLING FIRM:	SGS	LOCATION:	Levittown park between Levittown Pkwy and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 523.9 ft. Total depth of boring: 455 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
100				
110	SAND (fine) with trace interbedded Silt; light gray-brown.	SP		
120	SAND (fine) and SILT, with interbedded oxidized Silt; moderate brown.	SM		
130				
140	SAND (medium-coarse), trace Silt; yellow-brown to light gray.	SW		
150	SAND (fine); light tan.	SP		Profiler refusal at 151' bgs, pulled rods and advanced casing from 70' bgs to 160'
160	SAND (fine) with little interbedded Silt; light brown-yellow, oxidized.	SP		
170	SAND (fine-medium); light brown, micaceous.	SW		
180				
190				

Boring ID:

MALCOLM PIRNIE, INC.

P-114

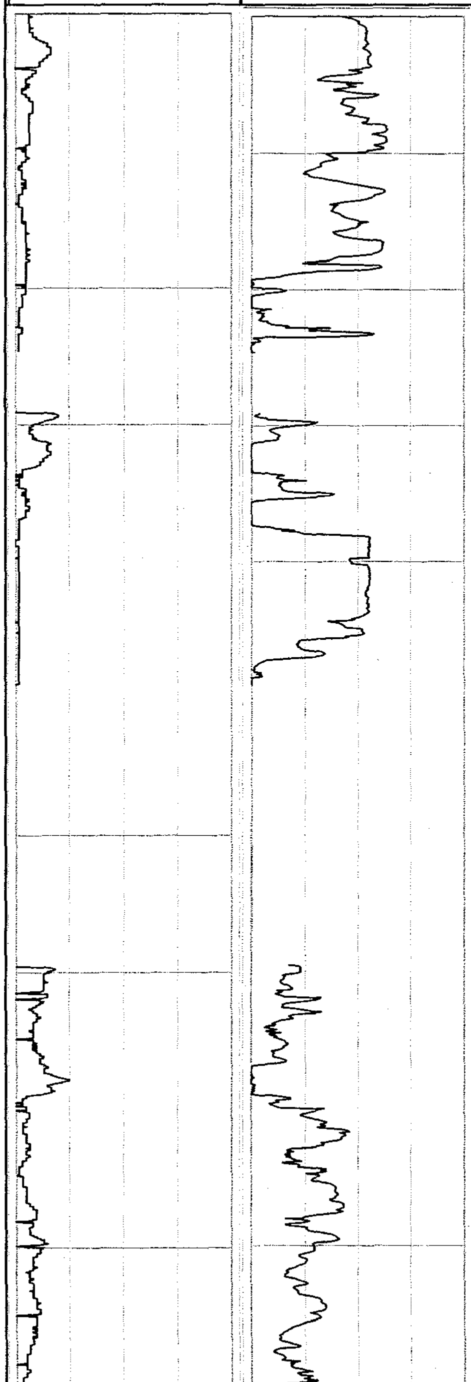
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	July 11, 2007
JOB NUMBER:	4563001	END DATE:	July 28, 2007
DRILLING FIRM:	SGS	LOCATION:	Levittown park between Levittown Pkwy and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 523.9 ft. Total depth of boring: 455 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
200				
210	SILT and SAND; light yellow-white, with light brown, interbedded fine Sand.	SM		
220				
230				Profiler refusal at 224.7' bgs, pulled rods and advanced casing from 160' bgs to 230'
	SILT, little interbedded fine Sand < 4' thick; Light - dark gray.	ML		
240				
250	SILT and CLAY, with interbedded Sand (fine-medium) at 267'; dark gray-black, carbonaceous grading to tan.	ML-CL		Profiler refusal at 249' bgs, pulled rods and advanced casing from 230' bgs to 270'
260				
270	SILT, with little Sand (fine); dark gray-black, carbonaceous.	ML		
280	SAND (fine), Light tan, micaceous.	SP		
290				

Boring ID:

P-114

MALCOLM PIRNIE, INC.

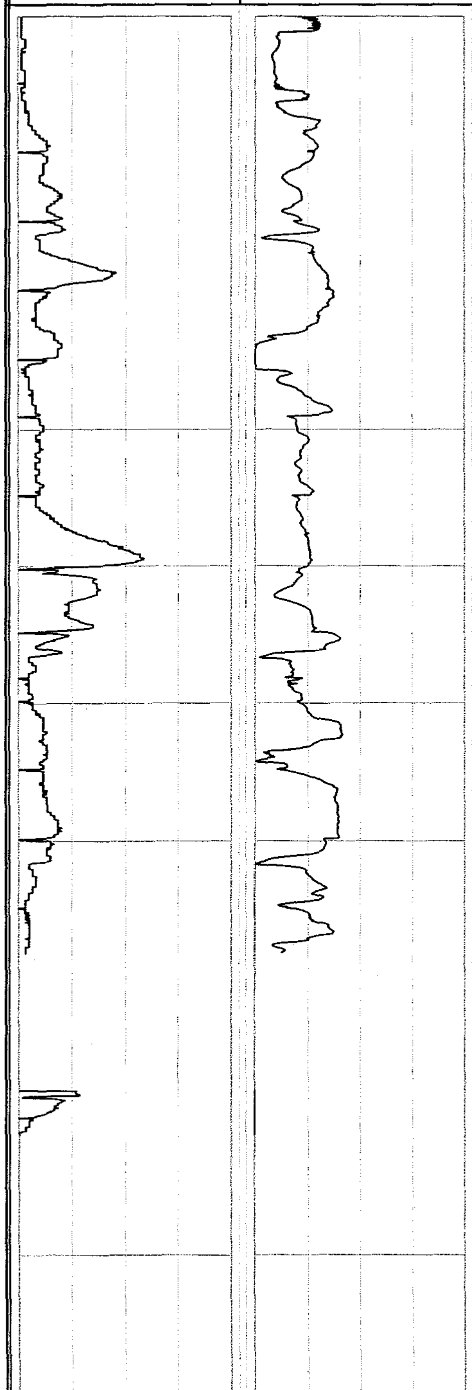
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	July 11, 2007
JOB NUMBER:	4563001	END DATE:	July 28, 2007
DRILLING FIRM:	SGS	LOCATION:	Levittown park between Levittown Pkwy and
DRILLING METHOD:	Mud Rotary		Acre Lane.
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 523.9 ft. Total depth of boring: 455 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
300	SAND (fine), trace-little Silt; light gray-brown.	SP		
310				
320				
330				
340				
350				
360	SAND (fine) and SILT, little Clay to approximatly 378'; moderate.-dark gray.	SM		
370				Pulled rods at 370' bgs and advanced casing from 270' bgs to 380'
380	CLAY, with interbedded carbonaceous Clay-Silt lenses; moderate.-dark gray,	CL		Profiler refusal at 381.3' bgs, pulled rods and advanced casing from 380' bgs to 455'
390				

StratLogs 1-08.xls

Boring ID:

MALCOLM PIRNIE, INC.

P-114

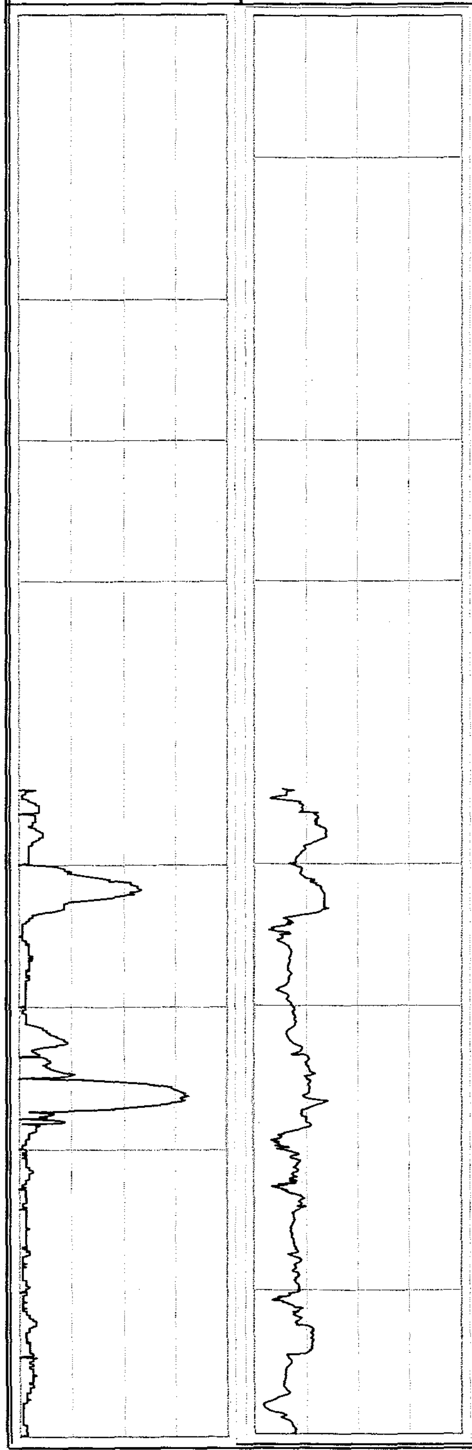
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	**START DATE:**	July 11, 2007
JOB NUMBER:	4563001	**END DATE:**	July 28, 2007
DRILLING FIRM:	SGS	**LOCATION:**	Levittown park between Levittown Pkwy and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	**DATUM:**	Land Surface
HELPER:	Julio Cancel	**LOGGED BY:**	J. Hilton

Total depth of Profile: 523.9 ft. Total depth of boring: 455 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
400	CLAY with trace - little Silt; buff white, soft, weak plasticity.	CL		
410	CLAY with interbedded carbonaceous lenses <0.5' thick; dark gray.	CL		
420	CLAY; buff white, moderately stiff, massive.	CL		
430				
440				
450	SAND (medium-coarse) and SILT, with little-trace silt, trace interbedded Clay <0.5'thick; white.	SM		
				End of mud logging at 455 ft
460				
470				
480				
490				

Boring ID:

MALCOLM PIRNIE, INC.

P-114

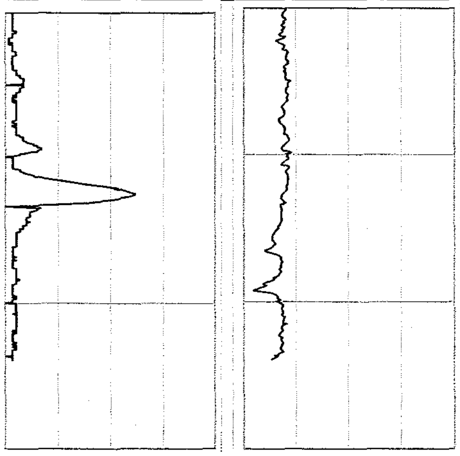
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	July 11, 2007
JOB NUMBER:	4563001	END DATE:	July 28, 2007
DRILLING FIRM:	SGS	LOCATION:	Levittown park between Levittown Pkwy and Acre Lane.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 523.9 ft.   Total depth of boring: 455 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.6 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
500				
510				
520				End of profile at 523.9 ft
530				
540				
550				
560				
570				
580				
590				

Data Usability Summary Report
Part 1 of 2
Profiles P-102 and P-104

Former Sylvania Electric Products Facility
GTE Operations Support Incorporated
Hicksville, NY

VALIDATION REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected south of the former Sylvania Electric Products Incorporated facility in Hicksville, New York. Sample collection activities were conducted by Malcolm Pirnie, Inc. of Fairlawn, NJ between 02/01/07 and 03/18/07.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, MO for Target Compound List Volatile Organic Compound (TCL VOC) analyses using United States Environmental Protection Agency (USEPA) guidance methods. The analytical data generated for this investigation were evaluated by Data Validation Services (DVS) using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;
- *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008, October 1999;
- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and
- *United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review*, SOP No. HW-6, Revision #11 (USEPA 1996a)

Professional judgment can be used to qualify results as estimated (J or UJ) in instances when so indicated by the overall quality of data.

Method non-conformances included exceedances of the percent differences of the continuing calibration standards, the recoveries of the system monitoring compounds, and matrix spike/matrix spike duplicate analyte recoveries. Most of the equipment and trip blanks contained low level contamination of up to four target compounds. The presence of these contaminants in those blanks indicate that some of the low level sample detections of these same analytes are to be considered as resulting from external contamination.

Also included in the data validation process is the replacement of results determined from responses that exceeded the laboratory calibration range (i.e., qualified with an "E" by the laboratory) with those reflecting responses (from dilution analyses) within the calibration range.

None of the exceedances of method non-conformances were significant enough to jeopardize the usability of the data. The reported sample results are usable based on the findings listed in this Data Usability Summary Report (DUSR).

Overall, 100 percent of the VOC data reported in the laboratory data packages were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to data validation QA/QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples collected south of the former Sylvania Electric Products Incorporated facility in Hicksville, New York (the Site). Sample collection activities were conducted between 02/01/07 and 03/18/07 by Malcolm Pirnie, Inc. of Fairlawn, NJ.

The laboratory Sample Delivery Group (SDG) (unique data package number), field identification, and laboratory identification number of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1: *Sample Cross-Reference List*

SDG	***Client ID***	***Laboratory ID***	***Analysis Requested***
F7B070312	EB-P-102-2-1-07 *Equipment Blank*	F7B070312-001	VOCs by USEPA 8260B
	P-102-75.45	F7B070312-002	VOCs by USEPA 8260B
	P-102-138.05	F7B070312-003	VOCs by USEPA 8260B
	P-102-DUP1 *Field Duplicate of P-102-170.45*	F7B070312-004	VOCs by USEPA 8260B
	P-102-170.45	F7B070312-005	VOCs by USEPA 8260B
	TB-01-29-02-06 *Trip Blank*	F7B070312-006	VOCs by USEPA 8260B
F7B210119	P-102-309.40	F7B210119-001	VOCs by USEPA 8260B
	P-102-320.3	F7B210119-002	VOCs by USEPA 8260B
	TB02140220 *Trip Blank*	F2B210119-003	VOCs by USEPA 8260B
F7C070289	P-104-EB	F7C070289-001	VOCs by USEPA 8260B
	TB-02280306 *Trip Blank*	F7C070289-002	VOCs by USEPA 8260B
	P-104-DUP1 *Field Duplicate of P-104-245.00*	F7C070289-003	VOCs by USEPA 8260B
	P-104-245.00	F7C070289-004	VOCs by USEPA 8260B
	P-104-235.00	F7C070289-005	VOCs by USEPA 8260B
F7C210209	P-104-377.35	F7C210209-001	VOCs by USEPA 8260B
	P-104-385.00	F7C210209-002	VOCs by USEPA 8260B
	P-104-427.9	F7C210209-003	VOCs by USEPA 8260B
	P-104-461.65	F7C210209-004	VOCs by USEPA 8260B
	TB-03130322 *Trip Blank*	F7C210209-005	VOCs by USEPA 8260B

1.2. General Considerations

The data validation review process is designed to evaluate the specific technical aspects of the analytical laboratory processing and the sample matrix, to verify that the final data reported for the field samples accurately reflect sample constituency, and to inform the end-user of the limitation of the data in the event that they do not. This report summarizes the findings of the review and outlines any deviations from the applicable QC criteria outlined in the following documents:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998.
- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000)
- *United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review*, SOP No. HW-6, Revision #11 (USEPA 1996a); and
- *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008, October 1999.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for volatile organic compound (VOC) analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW846 Method 5030B Purge/Trap Analysis
- SW846 Method 8260B Gas Chromatography/Mass Spectrometry

Each data package represents a sample delivery group (SDG), a collection of specific samples assigned during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and controls QC analyses. A total of four SDGs, each containing between two and four groundwater samples (and accompanying field QC), were created and processed for this project scope. The SDG, field identification and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. A summary of the findings associated with the validation and the specific QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Data completeness and usability are discussed in Section 4. Section 5 presents the Data Usability Summary Report (DUSR) Summary Information.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

Validation of the data was performed using guidance from the project QAPP (GTEOSI, 2002), the analytical methodology, and the data validation guidelines referenced in Section 1.

DVS performed a data review of all analytical results to assess data quality. A data review includes an assessment of sample handling protocols, supporting laboratory quality control (QC) parameters, and field QC.

The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B
- Analytical methods performed and test method references
- Sample condition - review of log-in records for cooler temperature, presence of headspace, chemical preservation, etc.
- Holding times (comparison of collection and analysis dates)
- Analytical results (units, values, significant figures, reporting limits, calculation algorithms
- Sample traceability and comparison to raw data
- Instrument tuning
- Initial calibration standards
- Continuing calibration standards
- Method blank results and laboratory contamination
- Laboratory control sample (LCS/MSB) results and comparison to laboratory and NYSASP control limits
- Matrix spike/matrix spike duplicate (MS/MSD) results and comparison to laboratory control limits
- Field duplicate results and comparison to data review criteria
- Surrogate recoveries and comparison to laboratory control limits
- Internal Standards and comparison to method and validation criteria
- Field QC sample (e.g., trip blanks, equipment blanks, etc.);
- Reporting Limits and dilutions

Review was performed on the laboratory analytical reports to determine completeness of the data packages and the acceptability of the accompanying QC data. When QC results fell outside recommended or required QC limits, validation data qualifiers were applied to the results in order to reflect the potential compromise in the integrity of the originally reported result. These qualifiers are in addition to, or a revision of, the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory:

"U"/ "ND"

Non-detected result at the required QAPP reporting limit--- the laboratory utilizes "U" within the full data package, and "ND" in the summary package report Forms I equivalents.

"B" Associated with a result if the compound was identified in the corresponding method blank.

"J" Indicates an estimated value or a value below the established reporting limit but above the method detection limit.

"E" This flag identifies compounds whose concentrations exceed the calibration range of the instrument for the specific analysis; data qualified with an "E" are qualitative only and not useable for quantitative purposes. All results qualified with an "E" were required to be re-analyzed using an applicable dilution and re-reported.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

"U" The analyte was not detected at the indicated reporting limit.

"J" Estimated concentration because the result was below the sample reporting limit or quality control criteria were not met.

"UJ" The chemical was not detected at or above the indicated reporting limit. However, the reporting limit is approximate and may or may not represent the actual limit of reporting necessary to accurately and precisely measure the analyte in the sample.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes the review evaluation and subsequent usability of the data generated for this sampling event, as indicated by results of quality control parameters associated with the project samples. Laboratory compliance with required deliverables and processing was also assessed.

3.2. Validation Review

3.2.1. Completeness Review

The laboratory data packages were generated to include summary forms and raw data as specified in the New York State Department of Environmental Conservation (NYSDEC) Category B format. All summary form and raw data required for full validation review were provided. No resubmissions were requested of the laboratory.

3.2.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. These included SW846 Method 5030B (aqueous sample purge/trap analysis) followed by Method 8260B (gas chromatography/mass spectrometry). The samples were analyzed using a 25-mL purge volume, thus providing lower reporting limits for each compound.

3.2.3. Sample Receipt

Nineteen aqueous samples were submitted for VOC analysis between February 1, 2007 and March 18, 2007. This included eleven field samples, two field duplicates, two field blanks, and four trip blanks.

The sample temperatures at the time of receipt were within the recommended temperature range of 4°C±2°C for all SDGs. Field and laboratory personnel completed the Chain-of-Custody (COC) documents correctly recording the signature, date, and time of custody transfer.
The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This Form identifies whether the containers were received undamaged, within the proper temperature range, at the proper pH, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory.

3.2.4. Holding Times

The technical and contractual holding times between sample collection and laboratory analyses meet method and QAPP requirements of 14-days for acid preserved samples.

3.2.5. Analytical Results

The laboratory provided a Form I equivalent with the reported analytical results for the requested analyses. The Form I format that was submitted is not strictly in compliance with USEPA CLP requirements as regards the inclusion of laboratory name and code. The forms do show the client sample identification, the laboratory sample identification, the file identification, the matrix, the date and time the sample was collected, the date the sample was received, the date and time the sample was analyzed, the dilution factor, the preparation batch identification number, the chemical abstract service (CAS) number for each analyte, the units of measure; and the laboratory qualifier (if any). Additional CLP forms were provided (e.g., II, III, etc.) to report applicable QC information for the analyses performed. The laboratory provided all the necessary forms for the VOC method.

3.2.6. Traceability to Raw Data

The traceability of the sample results to the raw data was easily accomplished by the use of the information on the summary forms and laboratory analysis logs.

3.2.7. Instrument Tuning

The GC/MS system performance was shown to produce acceptable mass identifications and sensitivity with the evaluation of the instrument tuning compound bromofluorobenzene (BFB). All requirements for mass fragmentation and resolution were met. The instrument performance was checked prior to calibration and once every 12-hour shift for all analytical QC batches.

3.2.8. Initial Calibration

Calibration standards are analyzed at required frequency and concentration in order to show that the instrumentation is performing consistently and to establish the linear range of response.

All linearity relative standard deviations (%RSD) met analytical and validation guidelines. Continuing calibration standards produced percent difference (%D) values that meet analysis protocol and validation requirements. Relative response factors (RRFs) were within method protocol requirements. However, responses for up to three compounds in the calibration standards show RRFs typical for this methodology, but below the validation limit of 0.05. Acceptance of these data is based upon the linearity and consistency of standard responses, the recoveries of these analytes in the spiked QC, and the quality of mass spectra for acetone (which can be directly correlated to those for other ketones). Data for the affected chemicals in the associated samples are qualified as estimated. Table 3-1 shows the samples and indicated qualifications:

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Sample ID***	***Compounds****	***Action***
F7B070312	EB-P-102-2-1-07 *Equipment Blank*	RRF<0.05: acetone, 2-butanone, 2-hexanone	UJ – all non-detect results J – all positive results above the laboratory reporting limit
	P-102-75.45		
	P-102-138.05		
	P-102-DUP1 *Field Duplicate of P-102-170.45*		
	P-102-170.45		
	TB-01-29-02-06 *Trip Blank*		
F7B210119	P-102-309.40	RRF<0.05: acetone, 2-butanone, 2-hexanone	UJ – all non-detect results J – all positive results above the laboratory reporting limit
	P-102-320.3		
	TB02140220 *Trip Blank*		
F7C070289	P-104-EB	RRF<0.05: acetone, 2-butanone, 2-hexanone	UJ – all non-detect results J – all positive results above the laboratory reporting limit
	TB-02280306 *Trip Blank*		
	P-104-DUP1 *Field Duplicate of P-104-245.00*		
	P-104-245.00		
	P-104-235.00		
F7C210209	P-104-377.35	RRF<0.05: acetone	UJ – all non-detect results J – all positive results above the laboratory reporting limit
	P-104-385.00		
	P-104-427.9		
	P-104-461.65		
	TB-03130322 *Trip Blank*		

3.2.9. Continuing Calibration

The continuing calibration standards (CCAL) were performed with a mid-level standard immediately following the tuning check at the beginning of each 12-hour analytical sequence. The CCAL verification analyses met method criteria (i.e., RRFs were >0.05 for the SPCCs, and the percent differences (%Ds) from the avgRRF were < 20% for the CCCs) for all analytical QC batches, with the exception of low RRFs for the compounds noted above in the ICAL discussion.

For the target compounds, the %Ds were greater than 20% for two compounds. Although method criteria were met, as a conservative approach the results associated with a CCAL that exceeded 20%D were qualified as estimated ("J" or "UJ"). Table 3-2 shows a summary of the samples and qualified parameters.

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F7C070289	P-104-EB	%D > 20% carbon disulfide 2-butanone	UJ – all non-detect results J – all positive results above the laboratory reporting limit
	TB-02280306 *Trip Blank*		
	P-104-DUP1 *Field Duplicate of P-104-245.00*		
	P-104-245.00		
	P-104-235.00		

3.2.10. Laboratory Method Blanks

Blanks are processed to evaluate the potential for external contamination at sample collection, transport, and analysis.

Method blanks are clean water samples that are processed as part of the analytical sequence, and whenever contamination may be present in the analytical system.

Laboratory method blanks show no contamination, and no qualification or edit to the sample results is indicated.

3.2.11. Laboratory Control Sample Results

LCSs are fortified blanks that are spiked with known concentrations of specific analytes. The recoveries of these analytes confirm that laboratory processing and instrumentation are producing accurate and consistent results.

LCSs were processed at the correct frequency. All percent recoveries were within laboratory control limits and validation action levels with the exception of those for dibromochloromethane (81% and 80%, below 85%) in one of the LCSs. Results for this compound in the associated samples have been qualified as estimated ("J" or "UJ"), and may have a low bias. Table 3-3 shows the affected samples:

Table 3-3. *Evaluation of Laboratory Control Sample Results*			
Package Identification	***Client ID***	***Compound***	***Action***
F7C070289	P-104-DUP1	Dibromochloromethane	"UJ" (low recoveries)
	P-104-245.00		
	P-104-235.00		

Correlations of duplicate LCSs were evaluated and show acceptable precision.

3.2.12. Matrix Spike/Matrix Spike Duplicate Analyses

Target analyte compounds are added to defined project samples in order to monitor how well those analytes recover through the analytical process. Duplicate matrix spike or duplicate parent sample results are also compared to see how well they correlate to one another. Those recoveries indicate the accuracy and precision of sample reported results.

Project sample P-104-461.65 was submitted for MS/MSD analyses. One compound showed elevated recoveries (135% and 140%, above 133%). The detection in the parent sample is therefore qualified as being estimated in value. This is shown in Table 3-4.

Table 3-4. *Evaluation of Matrix Spike/Matrix Spike Duplicate Sample Results*			
Package Identification	***Client ID***	***Compound***	***Action***
F7C210209	P-104-461.65	Tetrachloroethene	"J" (due to elevated spike recoveries)

3.2.13. Field Duplicate Analyses

Two project samples, P-102-170.45 and P-104-245.00 were submitted with accompanying field duplicates. An evaluation of the precision of the field sampling procedure (as well as the laboratory analysis procedure) was made based on the relative percent difference (RPD) calculated for the original and duplicate sample results. RPD calculations were made only when both results were above the laboratory reporting limits. The RPD values for all compounds were less than 30% (aqueous data evaluation criteria).

3.2.14. Trip Blanks and Equipment Blanks

Blanks are processed to evaluate the potential for external contamination at sample collection, transport, and analysis.

- Equipment blanks are collected by pouring de-ionized water through decontaminated sampling equipment in order to verify that the decontamination process is performed completely.
- Trip blanks are sealed vials of clean water that are transported with the sample vials from the laboratory to the site prior to sample collection, and from the site to the laboratory with the collected samples. They are stored and processed with the project samples, thus reflecting potential contamination from external sources.

Four trip blanks and two equipment blanks were submitted with the groundwater samples. Three of the trip blanks and both equipment blanks show low-level detections of acetone, trichloroethene, tetrachloroethene, and/or toluene. Results for these specific analytes in associated field samples that were found at concentrations within the validation action limit have been edited to reflect that the sample detected values may be a result of external contamination. Edits to the affected target compounds were based on trip blank and equipment blank contamination, in accordance with practices described in the validation guidance documents listed in Sections 1.2 and 3.2.10 (method blank contamination). Table 3-5 shows the samples and compounds that were qualified as non-detect ("U").

Table 3-5. *Evaluation of Trip Blank and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F7B070312	P-102-75.45 P-102-138.05 P-102-DUP1 P-102-170.45	Trichloroethene	Revised result to "U" (non-detect)
F7B210119	P-102-320.3	Trichloroethene	Revised result to "U" (non-detect)
F7C210209	P-104-427.9 P-104-461.65	Trichloroethene	Revised result to "U" (non-detect)

3.2.15. System Monitoring Compounds

System Monitoring Compounds (SMC) are surrogate standards that behave similarly to the target analytes during the analysis procedures, and serve to monitor system performance and potential sample matrix interference.

The three SMC evaluated in the TCL VOA analyses generally show acceptable recoveries in the field samples. This indicates that there are no significant sample matrix effects on the recoveries of target analytes, and aids in the confirmation of reported quantitative values. However, one of the samples exhibited a slightly low recovery for surrogate d8-toluene in the undiluted analysis (74%, below the 76% lower limit of the acceptance range). Therefore, results for all of the analytes in that sample except tetrachloroethene (which is derived from the dilution) are qualified as estimated ("J" or "UJ"), as shown in Table 3-6.

Table 3-6. *Evaluation of System Monitoring Compounds*

Package Identification	***Sample ID***	***Compound***	***Action***
F7C210209	P-104-385.00	All analytes except tetrachloroethene	UJ – all non-detect results J – all positive results above the laboratory reporting limit

It is noted that two of the method blanks exhibited elevated recovery for one SMC. Those blanks show no detection of target analytes, and therefore there is no effect on the reported results of those blanks or the associated project samples.

3.2.16. Internal Standards

System performance and sample matrix interferences are evaluated during the VOA analyses by the addition of internal standard compounds to all samples and associated QC.
All of the internal standard responses were within the required range of 50-200% of the associated calibration verification. The retention times of the internal standards fell within ± 30 seconds from that of the most recent calibration for all analyses.

3.2.17. Compound Identification and Quantitation of Results

The retention times and mass spectra of detected analytes meet protocol requirements for identification of the target analytes.

The retention times of detected analytes meet protocol requirements for identification.

Raw data were provided for review in the data package. Calculation algorithms, quantitative results, and reporting limit values have been confirmed during this review process.

Seven of the project samples were processed at secondary dilution in order to bring certain of the analyte detected responses into instrument calibration range. The results derived from the dilution analyses are used for those specific sample analyte results, as shown in Table 3-7.

Table 3-7. *Summary of Laboratory Re-Analyses*

Package Identification	***Client ID***	***Compound Reported From Dilution Analysis***
F7B210119	P-102-309.40	Tetrachloroethene at 1000 ug/L
	P-102-320.3	Tetrachloroethene at 94 ug/L
F7C070289	P-104-DUP1	Trichloroethene at 200 ug/L
		Tetrachloroethene at 1100 ug/L
	P-104-245.00	Trichloroethene at 170 ug/L
		Tetrachloroethene at 920 ug/L
	P-104-235.00	Trichloroethene at 110 ug/L
		Tetrachloroethene at 510 ug/L
F7C210209	P-104-377.35	Tetrachloroethene at 2900 ug/L
	P-104-385.00	Tetrachloroethene at 2300 ug/L

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the VOC data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to data validation QA/QC exceedances should be considered conditionally usable. No project data have been rejected.

The samples collected from the site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI, 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration or detection limit of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples, and LCS recoveries indicate the accuracy of the data.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. Proper documentation was provided to enable a thorough validation review of the analytical data.

2. Have all holding times been met?

All holding times were met.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

The laboratory used the laboratory control limits during the analyses performed for this sampling event. Only minor QA/QC deviations were observed, with subsequent minimal qualification to sample data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USEPA guidance methods be used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for the analyses performed for this sampling event, which met data user and client needs.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The raw data confirms the reported qualitative and quantitative results that were submitted by the laboratory in the data packages.

Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data (although "ND" was used for "U" on one set of forms. The validation qualifiers were applied as required by validation guidelines listed in Section 1

References

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW846) USEPA, Final Update IIIA, April 1998;

USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, EPA 540-R-99-008, October 1999;

Analytical Services Protocol (ASP), New York State Department of Environmental Conservation (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and

United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review, SOP No. HW-6, Revision #11 (USEPA 1996a)

Data Usability Summary Report
Part 2 of 2
Profiles P-110, P-112, and P-114

Former Sylvania Electric Products Facility
GTE Operations Support Incorporated
Hicksville, NY

VALIDATION REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected south of the former Sylvania Electric Products Incorporated facility in Hicksville, New York. Sample collection activities were conducted by Malcolm Pirnie, Inc. of Fairlawn, NJ between May 10, 2007 and July 17, 2007. The environmental samples collected for this investigation were submitted to Test America Laboratories, Inc. (aka Severn Trent Laboratories, Inc.) of Earth City, MO for Target Compound List Volatile Organic Compound (TCL VOC) analyses using United States Environmental Protection Agency (USEPA) guidance methods. The analytical data generated for this investigation were evaluated by Data Validation Services (DVS) using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;
- *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008, October 1999;
- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and
- *United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review*, SOP No. HW-6, Revision #11 (USEPA 1996a)

Professional judgment can be used to qualify results as estimated (J or UJ) in instances when so indicated by the overall quality of data.

Method non-conformances included exceedances for the calibration standard responses, the recovery of a system monitoring compound, and a Laboratory Control Sample (LCS) recovery. The equipment blanks contained low level contamination of either one or four target compounds. The presence of these contaminants in those blanks indicate that some of the low level sample detections of these same analytes are to be considered as resulting from external contamination.

Also included in the data validation process is the replacement of results determined from responses that exceeded the laboratory calibration range (i.e., qualified with an "E" by the laboratory) with those reflecting responses (from dilution analyses) within the calibration range.

None of the exceedances of method non-conformances were significant enough to jeopardize the usability of the data. The reported sample results are usable based on the findings listed in this Data Usability Summary Report (DUSR).

Overall, 100 percent of the VOC data reported in the laboratory data packages were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to data validation QA/QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples collected south of the former Sylvania Electric Products Incorporated facility in Hicksville, New York (the Site). Sample collection activities were conducted between 5/10/07 and 7/17/07 by Malcolm Pirnie, Inc. of Fairlawn, NJ. A total of twenty-nine groundwater samples, a field duplicate, four trip blanks, and two equipment blanks were processed.

The laboratory Sample Delivery Group (SDG) (unique data package number), field identification, and laboratory identification number of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1: *Sample Cross-Reference List*

SDG	***Client ID***	***Laboratory ID***	***Analysis Requested***
F7E230113	P-112-179-6	F7E230113-001	VOCs by USEPA 8260B
	P-112-190.2	F7E230113-001	VOCs by USEPA 8260B
	P-112-232.2	F7E230113-001	VOCs by USEPA 8260B
	P-112-240.2	F7E230113-001	VOCs by USEPA 8260B
	TB 05070522	F7E230113-001	VOCs by USEPA 8260B
F7F220256	P-110-190.15	F7F220256-002	VOCs by USEPA 8260B
	P-110-260.15	F7F220256-003	VOCs by USEPA 8260B
	P-110-269.80	F7F220256-004	VOCs by USEPA 8260B
	P-110-281.70	F7F220256-005	VOCs by USEPA 8260B
	P-110-290.15	F7F220256-006	VOCs by USEPA 8260B
	P-110-329.20	F7F220256-007	VOCs by USEPA 8260B
	P-110-350.15	F7F220256-008	VOCs by USEPA 8260B
	P-110-DUP1	F7F220256-009	VOCs by USEPA 8260B
	P-110-EB2	F7F220256-001	VOCs by USEPA 8260B
	TB061207062107	F7F220256-010	VOCs by USEPA 8260B
F7G030134	P-110-408.45	F7G030134-002	VOCs by USEPA 8260B
	P-110-421.15	F7G030134-001	VOCs by USEPA 8260B
	P-110-429.35	F7G030134-003	VOCs by USEPA 8260B
	P-110-439.25	F7G030134-004	VOCs by USEPA 8260B
	P-110-452.15	F7G030134-005	VOCs by USEPA 8260B

Table 1-1: Sample Cross-Reference List			
SDG	***Client ID***	***Laboratory ID***	***Analysis Requested***
F7G030134	P-110-460.15	F7G030134-006	VOCs by USEPA 8260B
	P-110-470.05	F7G030134-007	VOCs by USEPA 8260B
	TB–062607	F7G030134-008	VOCs by USEPA 8260B
F7G190339	P-114-74.1	F7G190339-001	VOCs by USEPA 8260B
	P-114-84.8	F7G190339-002	VOCs by USEPA 8260B
	P-114-114.8	F7G190339-003	VOCs by USEPA 8260B
	P-114-124.8	F7G190339-004	VOCs by USEPA 8260B
	P-114-134.8	F7G190339-005	VOCs by USEPA 8260B
	P-114-143.8	F7G190339-006	VOCs by USEPA 8260B
	P-114-161.5	F7G190339-007	VOCs by USEPA 8260B
	P-114-193.8	F7G190339-008	VOCs by USEPA 8260B
	P-114-222.8	F7G190339-009	VOCs by USEPA 8260B
	P-114-271.9	F7G190339-010	VOCs by USEPA 8260B
	P-114-298.3	F7G190339-011	VOCs by USEPA 8260B
	EB2	F7G190339-012	VOCs by USEPA 8260B
	TB-70711	F7G190339-013	VOCs by USEPA 8260B

1.2. General Considerations

The data validation review process is designed to evaluate the specific technical aspects of the analytical laboratory processing and the sample matrix, to verify that the final data reported for the field samples accurately reflect sample constituency, and to inform the end-user of the limitation of the data in the event that they do not. This report summarizes the findings of the review and outlines any deviations from the applicable QC criteria outlined in the following documents:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998.
- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000)
- *United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review*, SOP No. HW-6, Revision #11 (USEPA 1996a); and
- *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008, October 1999.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for volatile organic compound (VOC) analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW846 Method 5030B Purge/Trap Analysis
- SW846 Method 8260B Gas Chromatography/Mass Spectrometry

Each data package represents a sample delivery group (SDG), a collection of specific samples assigned during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and controls QC analyses. A total of four SDGs, each containing between four and eleven groundwater samples (and accompanying field QC), were created and processed for this project scope. The SDG, field identification and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. A summary of the findings associated with the validation and the specific QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Data completeness and usability are discussed in Section 4. Section 5 presents the Data Usability Summary Report (DUSR) Summary Information.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

Validation of the data was performed using guidance from the project QAPP (GTEOSI, 2002), the analytical methodology, and the data validation guidelines referenced in Section 1.

DVS performed a data review of all analytical results to assess data quality. A data review includes an assessment of sample handling protocols, supporting laboratory quality control (QC) parameters, and field QC. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B
- Analytical methods performed and test method references
- Sample condition - review of log-in records for cooler temperature, presence of headspace, chemical preservation, etc.
- Holding times -comparison of collection and analysis dates
- Analytical results -units, values, significant figures, reporting limits, calculation algorithms
- Sample traceability and comparison to raw data
- Instrument tuning
- Initial calibration standards
- Continuing calibration standards
- Method blank results and laboratory contamination
- Laboratory control sample (LCS/MSB) results and comparison to laboratory and NYSASP control limits
- Matrix spike/matrix spike duplicate (MS/MSD) results; comparison to laboratory control limits
- Field duplicate results and comparison to data review criteria
- Surrogate recoveries and comparison to laboratory control limits
- Internal Standards and comparison to method and validation criteria
- Field QC sample (e.g., trip blanks, equipment blanks, etc.) --external contamination;
- Reporting Limits and dilutions

Review was performed on the laboratory analytical reports to determine completeness of the data packages and the acceptability of the accompanying QC data. When QC results fell outside recommended or required QC limits, validation data qualifiers were applied to the results in order to reflect the potential compromise in the integrity of the originally reported result. These qualifiers are in addition to, or a revision of, the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory:

"U"/ "ND"
: Non-detected result at the required QAPP reporting limit— the laboratory utilizes "U" within the full data package, and "ND" in the summary package report Forms I equivalents.

"B" Associated with a result if the compound was identified in the corresponding method blank.

"J" Indicates an estimated value or a value below the established reporting limit but above the method detection limit.

"E" This flag identifies compounds whose concentrations exceed the calibration range of the instrument for the specific analysis; data qualified with an "E" are qualitative only and not useable for quantitative purposes. All results qualified with an "E" were required to be re-analyzed using an applicable dilution and re-reported.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

"U"/"ND"
: The analyte was not detected at the indicated reporting limit.

"J" Estimated concentration because the result was below the sample reporting limit or quality control criteria were not met.

"UJ" The chemical was not detected at or above the indicated reporting limit. However, the reporting limit is approximate and may or may not represent the actual limit of reporting necessary to accurately and precisely measure the analyte in the sample.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes the review evaluation and subsequent usability of the data generated for this sampling event, as indicated by results of quality control parameters associated with the project samples. Laboratory compliance with required deliverables and processing was also assessed.

3.2. Validation Review

3.2.1. Completeness Review

The laboratory data packages were generated to include summary forms and raw data as specified in the New York State Department of Environmental Conservation (NYSDEC) Category B format. All summary form and raw data required for full validation review were provided. Custody and login forms pertaining to one of the data packages were provided on request.

3.2.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. These included SW846 Method 5030B (aqueous sample purge/trap analysis) followed by Method 8260B (gas chromatography/mass spectrometry). The samples were analyzed using a 25-mL purge volume, thus providing lower reporting limits for each compound than those available with the unmodified method.

3.2.3. Sample Receipt

Thirty-six aqueous samples were submitted for VOC analysis between May 10, 2007 and July 17, 2007. This included twenty-nine field samples, one field duplicate, two equipment blanks, and four trip blanks.

The sample temperatures at the time of receipt were within the recommended temperature range of 4°C±2°C for all SDGs except that pertaining to samples collected in May. The temperature following overnight delivery was 10°C, just at the upper limit of the validation action range. No qualification is made to the data.

Field and laboratory personnel completed the Chain-of-Custody (COC) documents correctly recording the signature, date, and time of custody transfer. The custody forms for fifteen of the samples show sample IDs with one fewer significant figure than the vial label IDs. The sample IDs were reported by the laboratory per the custody forms.

The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This Form identifies whether the containers were received undamaged, within the proper temperature range, at the proper pH, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory.

Both vials of P-112-190.15 were received with very small bubble headspace. Results for that sample are therefore qualified as estimated, with a potentially low bias to the reported values. Table 3-1 shows a summary of the sample and qualified parameters.

Table 3-1. *Evaluation of Sample Receipt*

Package Identification	*Sample IDs*	*Compounds*	*Action*
F7E230113	P-112-190.2	All	Qualify detections "J" Qualify non-detections "UJ"

3.2.4. Holding Times

The technical and contractual holding times between sample collection and laboratory analyses meet method and QAPP requirements of 14-days for acid preserved field samples.

The trip blank associated with the May shipment was received by the laboratory outside of analytical holding time from the date of filling. The results for that blank are therefore qualified as estimated, with a potentially low bias. This means that the potential for external contamination in those four associated project samples has not been thoroughly evaluated. Results for low-level detections in that sample should be used with that consideration. Table 3-1 shows a summary of that blank and qualified parameters.

Table 3-2. *Evaluation of Holding Times*

Package Identification	*Sample IDs*	*Compounds*	*Action*
F7E230113	TB 05070522	All	Qualify non-detections "UJ"

3.2.5. Analytical Results

The laboratory provided a Form I equivalent with the reported analytical results for the requested analyses. The Form I format that was submitted is not strictly in compliance with USEPA CLP requirements as regards the inclusion of laboratory name and code. The forms do show the client sample identification, the laboratory sample identification, the file identification, the matrix, the date and time the sample was collected, the date the sample was received, the date and time the sample was analyzed, the dilution factor, the preparation batch identification number, the chemical abstract service (CAS) number for each analyte, the units of measure; and the laboratory qualifier (if any). Additional CLP forms were provided (e.g., II, III, etc.) to report applicable QC information for the analyses performed. The laboratory provided all the necessary forms for the VOC method.

3.2.6. Traceability to Raw Data

The traceability of the sample results to the raw data was easily accomplished by the use of the information on the summary forms and laboratory analysis logs.

3.2.7. Instrument Tuning

The GC/MS system performance was shown to produce acceptable mass identifications and sensitivity with the evaluation of the instrument tuning compound bromofluorobenzene (BFB). All requirements for mass fragmentation and resolution were met. The instrument performance was checked prior to calibration and once every 12-hour shift for all analytical QC batches.

3.2.8. Initial Calibration

Calibration standards are analyzed at required frequency and concentration in order to show that the instrumentation is performing consistently and to establish the linear range of response.

All linearity relative standard deviations (%RSD) met analytical and validation guidelines.

Relative response factors (RRFs) were within method protocol requirements. However, responses for acetone and 2-butanone in the calibration standards show RRFs typical for this methodology, but below the validation limit of 0.05. Acceptance of these data is based upon the linearity and consistency of standard responses, the recoveries of these analytes in the spiked QC, and the quality of the mass spectra of acetone. Data for those compounds in all project samples and QC are qualified as estimated. Table 3-3 shows the samples and indicated qualifications:

Table 3-3. *Evaluation of Initial Calibration Results*

Package Identification	***Sample IDs***	***Compounds****	***Action***
F7E230113 F7F220256 F7G030134 F7G190339	All	Acetone and 2-butanone	Qualify detections "J" Qualify non-detections "UJ"

3.2.9. Continuing Calibration

The continuing calibration standards (CCAL) were performed with a mid-level standard immediately following the tuning check at the beginning of each 12-hour analytical sequence. The CCAL verification analyses met method criteria (i.e., RRFs were >0.05 for the SPCCs, and the percent differences (%Ds) from the avgRRF were < 20% for the CCCs) for all analytical QC batches. For the target compounds, the %Ds were greater than 20% for three compounds. Although method criteria were met, as a conservative approach the results associated with a CCAL that exceeded 20%D were qualified as estimated ("J" or "UJ"). Table 3-4 shows a summary of the samples and qualified parameters.

Table 3-4. *Evaluation of Continuing Calibration Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
F7F220256	P-110-190.15, P-110-EB2, TB061207062107	Chloroethane and bromomethane	Qualify detections "J" Qualify non-detections "UJ"
	P110-260.15	Bromomethane	Qualify detections "J" Qualify non-detections "UJ"

Table 3-4. *Evaluation of Continuing Calibration Results*

Package Identification	*Sample ID*	*Compounds*	*Action*
F7G190339	P-114-74.1 P-114-84.8 P-114-114.8 P-114-124.8 P-114-134.8 P-114-143.8 P-114-161.5 P-114-193.8 P-114-222.8 P-114-271.9 P-114-298.3 TB-70711	Bromomethane	Qualify detections "J" Qualify non-detections "UJ"
	EB2	2-butanone	Qualify detections "J" Qualify non-detections "UJ"
F7G030134	P-110-408.45 P-110-421.15 P-110-429.35	Bromomethane acetone carbon tetrachloride	Qualify detections "J" Qualify non-detections "UJ"
	P-110-439.25 P-110-452.15 P-110-460.15 P-110-470.05 TB-062607	chloroethane	Qualify detections "J" Qualify non-detections "UJ"

3.2.10. Laboratory Method Blanks

Blanks are processed to evaluate the potential for external contamination at sample collection, transport, and analysis.

Method blanks are clean water samples that are processed as part of the analytical sequence, and whenever contamination may be present in the analytical system.

Laboratory method blanks show no contamination, with the exception of one in which bromomethane was detected at a low concentration. There were no detections of this compound in the field samples, and reported results are therefore unaffected.

3.2.11. Laboratory Control Sample Results

LCSs are fortified blanks that are spiked with known concentrations of specific analytes. The recoveries of these analytes confirm that laboratory processing and instrumentation are producing accurate and consistent results.

LCSs were processed at the correct frequency. All percent recoveries were within laboratory control limits and validation action levels with the exception of those for carbon tetrachloride (70% and 70%, below 73%) in one pair of the LCSs. Results for this compound in the associated samples have been qualified as estimated ("UJ"), and may have a low bias. Table 3-5 shows the affected samples:

Table 3-5. *Evaluation of Laboratory Control Sample Results*			
Package Identification	***Client ID***	***Compound***	***Action***
F7G030134	P-110-408.45 P-110-421.15 P-110-429.35	Carbon tetrachloride	Qualify non-detections "UJ"

Correlations of duplicate LCSs were evaluated and show acceptable precision.

3.2.12. Matrix Spike/Matrix Spike Duplicate Analyses

Target analyte compounds are added to defined project samples in order to monitor how well those analytes recover through the analytical process. Duplicate matrix spike or duplicate parent sample results are also compared to see how well they correlate to one another. Those recoveries indicate the accuracy and precision of sample reported results.

Project sample P-110-439.25 was submitted for MS/MSD analyses. All recoveries and duplicate correlations are within guidelines.

3.2.13. Field Duplicate Analyses

P-110-350.15 was submitted with an accompanying field duplicate. An evaluation of the precision of the field sampling procedure (as well as the laboratory analysis procedure) was made based on the relative percent difference (RPD) calculated for the original and duplicate sample results. RPD calculations were made only when both results were above the laboratory reporting limits. The RPD values for all compounds were less than 30% (aqueous data evaluation criteria).

3.2.14. Trip Blanks and Equipment Blanks

Blanks are processed to evaluate the potential for external contamination at sample collection, transport, and analysis.

- Equipment blanks are collected by pouring de-ionized water through decontaminated sampling equipment in order to verify that the decontamination process is performed completely.

- Trip blanks are sealed vials of clean water that are transported with the sample vials from the laboratory to the site prior to sample collection, and from the site to the laboratory with the collected samples. They are stored and processed with the project samples, thus reflecting potential contamination from external sources.

Four trip blanks and two equipment blanks were submitted with the groundwater samples. The trip blanks show no contamination. One of the equipment blanks shows low-level detections of acetone, trichloroethene, bromomethane, and carbon disulfide. The other shows a low level of carbon disulfide. Results for these specific analytes in associated field samples that were found at concentrations within the validation action limit have been edited to reflect that the sample detected values may be a result of external contamination. Edits to the affected target compounds were based on equipment blank contamination, in accordance with practices described in the validation guidance documents listed in Sections 1.2 and 3.2.10 (method blank contamination). Table 3-6 shows the samples and compounds that were qualified as non-detect ("U").

Table 3-6. *Evaluation of Trip Blank and Equipment Blank Results*			
Package Identification	***Sample ID***	***Compound***	***Action***
F7F220256	P-110-190.15 P-110-260.15 P-110-269.80 P-110-281.70 P-110-290.15	Carbon disulfide (0.38 ug/L)	Edit to "U"
F7G190339	P-114-124.8 P-114-134.8 P-114-143.8 P-114-161.5 P-114-222.8 P-114-271.9 P-114-298.3	Carbon disulfide (0.73 ug/L)	Edit to "U"
	P-114-74.1	Acetone (1.9 ug/L)	Edit to "U"

3.2.15. System Monitoring Compounds

System Monitoring Compounds (SMC) are surrogate standards that behave similarly to the target analytes during the analysis procedures, and serve to monitor system performance and potential sample matrix interference.

The three SMC evaluated in the TCL VOA analyses generally show acceptable recoveries in the field samples. This indicates that there are no significant sample matrix effects on the recoveries of target analytes, and aids in the confirmation of reported quantitative values. However, one of the samples exhibited a slightly low recovery for surrogate d8-toluene in the undiluted analysis (74%, below the 76% lower limit of the acceptance range). Therefore, results for all of the analytes in that sample except trichloroethene and tetrachloroethene (which is derived from the dilution) are qualified as estimated ("J" or "UJ"), as shown in Table 3-7.

Table 3-7. *Evaluation of System Monitoring Compounds*			
Package Identification	***Sample ID***	***Compounds***	***Action***
F7G030134	P-110-408.45	All except trichloroethene and tetrachloroethene	UJ – all non-detect results J – all positive results above the laboratory reporting limit

3.2.16. Internal Standards

System performance and sample matrix interferences are evaluated during the VOA analyses by the addition of internal standard compounds to all samples and associated QC.

Although several samples initially showed low internal standard responses, acceptable responses (within the required range of 50-200% of the associated calibration verification) were observed on the reanalyses. Included in the initially outlying analyses was a trip blank, further indicating instrumentation, rather than matrix, as the probable cause for the suppression. The re-analyses results were within holding time, and are used without qualification. The retention times of the internal standards fell within ± 30 seconds from that of the most recent calibration for all analyses.

3.2.17. Compound Identification and Quantitation of Results

The retention times and mass spectra of detected analytes meet protocol requirements for identification of the target analytes.

The retention times of detected analytes meet protocol requirements for identification.

Raw data were provided for review in the data package. Calculation algorithms, quantitative results, and reporting limit values have been confirmed during this review process.

Eighteen of the project samples were processed at secondary dilution in order to bring certain of the analyte detected responses into instrument calibration range. The results derived from the dilution analyses are used for those specific sample analyte results, as shown in Table 3-8.

Table 3-8. *Summary of Laboratory Re-Analyses*

Package Identification	***Client ID***	***Compound Reported From Dilution Analysis***
F7G030134	P-110-408.45	trichloroethene tetrachloroethene
	P-110-421.15	tetrachloroethene
	P-110-429.35	tetrachloroethene
	P-110-439.25	tetrachloroethene
	P-110-460.15	tetrachloroethene
F7G190339	P-114-114.8	trichloroethene
	P-114-124.8	tetrachloroethene
		trichloroethene
	P-114-134.8	trichloroethene
		cis-1,2-dichloroethene
	P-114-143.8	trichloroethene
		cis-1,2-dichloroethene
	P-114-161.5	trichloroethene
		cis-1,2-dichloroethene
	P-114-193.8	trichloroethene
		cis-1,2-dichloroethene
	P-114-222.8	trichloroethene
	P-114-271.9	trichloroethene
	P-114-298.3	trichloroethene

Table 3-8. *Summary of Laboratory Re-Analyses*

Package Identification	Client ID	Compound Reported From Dilution Analysis
F7F220256	P-110-350.15	trichloroethene
	P-110-DUP1	trichloroethene
F7E230113	P-112-232.2	tetrachloroethene
	P-112-240.2	tetrachloroethene

The result for tetrachloroethene in sample P-110-452.15 was derived from the undiluted analysis due to the fact that the dilution analysis showed two outlying internal standard responses and one elevated surrogate recovery. The result for that compound is then qualified as estimated because the response is above the established linear range of the instrument.

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the VOC data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to data validation QA/QC exceedances should be considered conditionally usable. No project data have been rejected.

The samples collected from the site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI, 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration or detection limit of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples, and LCS recoveries indicate the accuracy of the data.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. Proper documentation was provided to enable a thorough validation review of the analytical data.

2. Have all holding times been met?

All holding times were met.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

The laboratory used the laboratory control limits during the analyses performed for this sampling event. Only minor QA/QC deviations were observed, with subsequent minimal qualification to sample data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USEPA guidance methods be used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for the analyses performed for this sampling event, which met data user and client needs.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The raw data confirms the reported qualitative and quantitative results that were submitted by the laboratory in the data packages.

Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data (although "ND" was used for "U" on the sample results report forms. The validation qualifiers were applied as required by validation guidelines listed in Section 1

References

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW846) USEPA, Final Update IIIA, April 1998;

USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, EPA 540-R-99-008, October 1999;

Analytical Services Protocol (ASP), New York State Department of Environmental Conservation (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and

United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review, SOP No. HW-6, Revision #11 (USEPA 1996a)

Former Sylvania Electric Products Facility, Hicksville, NY

Voluntary Cleanup Program
Site No. V00089-1

MALCOLM PIRNIE

Malcolm Pirnie, Inc.
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Data Report P102, P104, P110, P112, P113 and P114

January 2008

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PIRNIE

GREEN SEAL

verizon

GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E75)
Irving, Texas 75038
(972) 718-4806

February 16, 2004

Mr. Robert Stewart
Division of Environmental Remediation
New York State Department of Environmental Conservation
SUNY Campus Loop Bldg. 40
Stony Brook, New York 11790-2356

Re: *Tank Report, Cell 2, 140 Cantiague Rock Road, Hicksville, NY*

Dear Mr. Stewart:

Enclosed please find the *Tank Report, Cell 2, 140 Cantiague Rock Road, Hicksville, NY.*

If you have any questions, please call me at 214-724-2506.

Sincerely,

Jean Agostinelli FC

Jean M. Agostinelli
Vice President and Controller

cc: Jerry Riggi
Division of Solid and Hazardous Materials
Bureau of Hazardous Waste & Radiation Management
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7255

URS

February 16 , 2004

Ms. Jean Agostinelli
Vice President - Controller
GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E60)
Irving, Texas 75038

Re: **Voluntary Cleanup Agreement**
For: Former Sylvania Electric Products Incorporated Facility
By: GTE Operations Support Incorporated
Site #: V-00089-1 Index #: W1-0903-01-12

Tank Report, Cell 2, 140 Cantiague Rock Road, Hicksville, New York

Dear Ms. Agostinelli:

This letter documents the findings and activities associated with the tank removed from Cell 2 during the soil remediation program. Cell 2 is located on the southeast corner of the 140 Property (Figure 1). Photographic documentation of the activities is provided in Appendix A.

Tank Removal

On July 1, 2003, during the excavation of soil within Cell 2, Temporary Enclosure I, a tank was unearthed in Subcells V10 and W10 approximately 4 feet below grade (Photograph 1). The tank measured approximately 7 feet in diameter and 19 feet long. The capacity of the tank was approximately 6,000 gallons and contained approximately 875 gallons of liquid and sludge. The historical use and age of the tank are unknown. No associated electrical equipment, piping to pumps, or vent lines were observed in the vicinity of the tank. Attached to the top center portion of the tank was one 6-inch diameter vertical pipe measuring approximately 1.5 feet long (Photograph 2). A 3-inch diameter pipe, approximately 2 feet long with an elbow facing north was partially attached to the east end of the tank. Consequently, during removal of the tank (Photograph 3) from the ground this pipe was dislodged. Numerous other sections of piping were located in the general vicinity of the tank (Figure 2); however, none appeared to be connected to the tank.

The tank was removed from the ground and temporarily stored within the Cell 2 enclosure (Photograph 4). While inside the enclosure, the tank was examined for content, corrosion, perforations, holes, cracks, and scanned for radiological and chemical impacts. A total of four

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openings were observed on the tank. Two of the openings were located on the top: a 6-inch diameter port located in the top of the vertical pipe and a 2-inch diameter opening located at the west end. The remaining two openings include a 1-inch diameter opening located at the lower middle section and a 3-inch diameter opening located at the top east end (Photograph 5).

The gamma radiation count rate survey was performed inside the tank using a collimated 3-inch by 3-inch sodium iodide (3" NaI) detector. The survey was performed by placing the 3" NaI detector approximately 2 feet down through the 6-inch opening at the top of the tank. The interior of the tank had gamma readings of 85,000 counts per minute (cpm), as compared to a location background of approximately 8,000 cpm. Volatile organic compounds (VOCs) were measured using a Mini RAE 2000™ photoionization detector (PID). PID readings measured within the tank ranged from 58 to 100 parts per million (ppm).

The gamma radiation exposure rate survey of the exterior surface of the tank was performed using a 1-inch sodium iodide (1" NaI) exposure rate detector. The maximum radiological reading was 500 micro Roentgen per hour (uR/Hr) on contact and 200 uR/Hr at a distance of 30 centimeters from the surface. These readings were taken in a location where background exposure rate readings were in the range of 10 uR/Hr. Large area wipes (LAWs) were collected on the exterior of the tank at the bottom and at the openings. These wipes were measured for removable surface contamination using a Dual Phosphor Alpha/Beta Scintillator. Readings for the base of the tank indicated less than minimum detectable activity (MDA). MDA values were approximately 110 disintegrations per minute (dpm)/LAW alpha and 770 dpm/LAW beta. Radiological readings for the areas around the openings were measured to be 300 alpha and 6,000 beta dpm/LAW above background. Background levels were approximately 20 dpm alpha and 1,500 dpm beta.

A visual inspection of the soils beneath the tank revealed staining within the footprint of the tank. Based on elevated field screening results for both VOCs and radiological activity, the soils in the vicinity of the tank were excavated and placed in Lift-Liners™ for off-Site disposal.

Soil Sampling

On July 1, 2003, subsequent to the tank removal from the ground, a total of five soil samples were collected from the bottom and the sidewalls of the tank pit excavation. One soil sample was collected from each of the four sidewalls of the excavation pit (samples UST A, UST B, UST C and UST D). The remaining soil sample was a three point composite collected from the base of the tank pit (UST E). The soil samples were analyzed on Site for select VOCs by Modified SW846 Methods 8021/8015 by Stone Environmental Laboratory (Stone) and for radiological activity by the on-Site gamma spectroscopy system (Gamma Spectroscopy via Method SOP-RAD-009) to provide real-time analytical readings. In addition, soil samples (UST A, UST B, UST C, UST D and UST E) were analyzed by Severn Trent Laboratories, Inc. (STL) in Earth City, Missouri. STL is NYSDOH ELAP certified and NELAP accredited in both New York and Utah. Samples were analyzed for*:

- Benzene, toluene, ethyl benzene, and total xylene (BTEXs) via USEPA Method 8021 + methyl tertiary butyl ether (MTBE);
- Total Semi-Volatile Organic Compounds (SVOCs) via USEPA Method 8270 (B/N and acid extractables);
- Total Metals via USEPA Method 6010B and Method 7471A; and
- Percent Moisture.

* Full Contract Laboratory Program (CLP)-type data packages were requested.

The Stone analytical results (Table 1) indicate that trichloroethene (TCE) was detected at a concentration of 0.119 mg/Kg for sample UST A. Tetrachloroethene (PCE) was detected at the following concentrations: 0.276 milligrams per kilogram (mg/Kg) (UST A), 0.284 mg/Kg (UST B), 0.175 mg/Kg (UST C), 2.181 mg/Kg (UST D), and 0.150 mg/Kg (UST E). No other constituents were detected by the on-Site analysis. In addition, the soil samples analyzed by STL indicated no elevated concentrations of BTEX compounds, MTBE, metals or semivolatile organic compounds (SVOCs). The STL laboratory analytical data from the soils collected beneath the tank are summarized in Tables 2 through 4.

Radiological results of the samples collected for analysis by on-Site gamma spectroscopy (Table 5) indicated elevated activity for both natural uranium (U-nat) and natural thorium (Th-nat). U-nat maximum concentration (corrected) was 108.0 pCi/g (UST B), and the maximum concentration for Th-nat (corrected) was 0.87 pCi/g (UST D).

As presented in the final cell backfill authorization package dated September 25, 2003 to NYSDEC, the excavation in Cell 2 (subcells V10 and W10) beneath the former tank attained the radiological and chemical cleanup criteria. Mr. Bob Stewart, NYSDEC, concurred with this conclusion in his September 4, 2003 memorandum indicating the draft results from his verification samples for VOCs from Cell 2 are within cleanup goals. Mr. Jerry Riggi, NYSDEC, provided verbal authorization to backfill this area.

Tank Contents Sampling

On July 2, 2003, while the tank was within the Cell 2 enclosure, the tank contents were sampled. Two samples, one liquid (UST L) and one sludge (UST G) were collected of the material inside the tank (Photographs 7). The contents of the tank were sampled by using a dip cup attached to a rod, and the sample was extracted and placed into the appropriate laboratory containers for analysis (Photograph 8). Once the samples had been collected the tank was wrapped in plastic, loaded into a roll-off type container and temporarily staged on Site in a controlled area of the 140 Building (Photograph 9). The two samples were collected for waste disposal characterization purposes and sent to STL. The samples were analyzed for*:

- Total VOCs: USEPA Method 8260B;
- Toxicity Characteristic Leaching Procedure (TCLP) GC/MS Volatiles: USEPA Method 8260B+TCLP Method 1311;
- TCLP SVOCs: USEPA Method 8270C+TCLP Method 1311;

- TCLP Metals: USEPA Method 6010B and 7470A (mercury) +TCLP Method 1311;
- TCLP Chlorinated Herbicides: Method 8151A+TCLP Method 1311;
- TCLP Organochlorine Pesticides: Method 8081A +TCLP Method 1311;
- pH: Method 9045A (solid) and 9040 (liquid);
- Reactivity (sulfide and cyanide): Method 7.3.3 and 7.3.4;
- Ignitability (flashpoint): Method 1010;
- Alkalinity: Method 310.1;
- Percent Moisture: Method 160.3 Modified;
- Gamma Spectroscopy: Method GA-01-R-Mod; and
- Alpha Spectroscopy: Methods 3004/RP-725 and 3050/RP-725.

* = Full CLP-type data packages were requested.

The results of the laboratory analytical data for the waste disposal characterization samples are summarized in Tables 6 through 13.

During all excavation and sampling activities conducted in association with the tank removal, the concentrations of radioactivity measured within the Temporary Enclosure and at the CAMP stations along the property perimeter were within allowable limits. Please see the July 2003 Progress Report submitted on August 7, 2003.

Tank Disposal

Based on the evaluation of the analytical results for the samples collected, the contents of the tank were solidified by adding Liqui-Sorb® 200 to the material remaining within the tank (Photographs 10, 11, and 12). A description of the pilot study completed for the use of Liqui-Sorb® 200 for the contents of the tank is provided in Appendix B. Once the contents were solidified, the tank was surveyed for radiological activity using a 1" NaI. Contact external exposure rate range was 20 to 130 uR/Hr in a location where background was approximately 7 uR/Hr; external surface contamination readings, taken using LAWs, were all in the range of background values stated earlier (approximately 20 dpm alpha and 1,500 dpm beta). The tank was also surveyed for VOCs using a PID. No VOCs were detected.

The tank was double wrapped in plastic and placed into a shipping container for transport by railcar for disposal by Envirocare of Utah, in Clive, Utah (Photographs 13 and 14). The tank was shipped on September 24, 2003. The shipping documentation is provided in Appendix C. The final disposal manifest documentation will be forwarded under separate cover once it is received from Envirocare of Utah.

If you have any questions or require additional information, please do not hesitate to contact me. I can be reached at 516-932-9157 or 908-272-8300.

Sincerely,
URS Corporation – New York

for

Robert D. Brathovde, P. E.
Engineer of Record

Professional Radiation Consulting, Inc. (PRCI) has reviewed this letter and the included radiological analysis results. I am in agreement with these conclusions.

Shane Brightwell, CHP
President, PRCI

Tables:

Soil Sample Data:
Table 1 – Volatile Organic Compounds and TPH (On-Site Laboratory)
Table 2 – BTEX and MTBE
Table 3 – Semivolatile Organic Compounds
Table 4 – Metals
Table 5 – Radiological Data Summary (On-Site Gamma Spec)

Tank Contents Sample Data:
Table 6 – General Chemistry
Table 7 – Volatile Organic Compounds
Table 8 – TCLP GC/MS Volatiles
Table 9 – TCLP Organochlorine Pesticides
Table 10 – TCLP Semivolatile Organic Compounds
Table 11 – TCLP Metals
Table 12 – TCLP Chlorinated Herbicides
Table 13 – Radiological Data Summary

Figures:

Figure 1 – Cell and Subcell Locations
Figure 2 – Sample Locations and Vicinity Map

Appendices:

Appendix A – Photographic Log
Appendix B – Liqui-Sorb®200 Pilot Study
Appendix C – Shipping Manifest

TABLES

Table 1

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville New York

Stone Environmental Inc. (On-Site Laboratory)
Tank Cell 2 V10
Volatile Organic Compounds and TPH

Compound	01117-C-EX-S-02V10USTA-09.0-S1			01118-C-EX-S-02V10USTB-09.0-S1			01119-C-EX-S-02V10USTC-09.0-S1			01120-C-EX-S-02V10USTD-09.0-S1			01121-C-EX-S-02V10USTE-10.0-S1		
	UST A			UST B			UST C			UST D			UST E		
	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ
Vinyl Chloride	0.464	U		0.482	U		0.424	U		0.415	U		0.591	U	
trans-1,2 Dichloroethene	0.116	U		0.121	U		0.106	U		0.104	U		0.148	U	
cis-1,2 Dichloroethene	0.116	U		0.121	U		0.106	U		0.104	U		0.148	U	
Benzene	0.116	U		0.121	U		0.106	U		0.104	U		0.148	U	
Trichloroethene	0.119			0.121	U		0.106	U		0.104	U		0.148	U	
Toluene	0.116	U		0.121	U		0.106	U		0.104	U		0.148	U	
Tetrachloroethene	0.276			0.284			0.175			2.181			0.150		
Ethylbenzene	0.116	U		0.121	U		0.106	U		0.104	U		0.148	U	
m,p - Xylene	0.116	U		0.121	U		0.106	U		0.104	U		0.148	U	
o-Xylene	0.116	U		0.121	U		0.106	U		0.104	U		0.148	U	
Total Petroleum Hydrocarbon (TPH)	2.321	U		2.411	U		2.122	U		2.076	U		2.955	U	

Notes:
Samples were analyzed by Modified SW 846 Methods 8021/8015.
Results are reported in milograms per kilogram (mg/Kg).
FQ = Final Qualifier.
Samples were collected on 7/1/03.
TPH value based on #2 Diesel reference standard.

Qualifiers:
U = Non-detect.

SYLS0020767

Table 2

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville New York

Severn Trent Laboratory
Tank Cell 2 V10
BTEX and MTBE

Compound	01117-C-EX-S-02V10USTA-09.0-S2			01118-C-EX-S-02V10USTB-09.0-S2			01119-C-EX-S-02V10USTC-09.0-S2			01120-C-EX-S-02V10USTD-09.0-S2			01121-C-EX-S-02V10USTE-10.0-S2		
	UST A			UST B			UST C			UST D			UST E		
	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ
Benzene	1.1	U		1.1	U		1	U		1.1	U		1.2	U	
Ethylbenzene	1.1	U		1.1	U		1	U		1.1	U		1.2	U	
MTBE	5.3	U		5.4	U		5.2	U		5.4	U		5.8	U	
Toluene	1.1	U		1.1	U		1	U		1.1	U		1.2	U	
Xylenes (total)	3.2	U		3.2	U		3.1	U		3.2	U		3.5	U	

Notes:
Samples were analyzed by USEPA Method 8021B.
Results are reported in miligrams per kilogram (µg/Kg).
FQ = Final Qualifier.
Samples were collected on 7/1/03.

Qualifiers:
U = Non-detect.

SYLS0020768

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville New York

Severn Trent Laboratory
Tank Cell 2 V10
Semivolatile Organic Compounds

Compound	01117-C-EX-S-02V10USTA-09.0-S2			01118-C-EX-S-02V10USTB-09.0-S2			01119-C-EX-S-02V10USTC-09.0-S2			01120-C-EX-S-02V10USTD-09.0-S2			01121-C-EX-S-02V10USTE-10.0-S2		
	UST A			UST B			UST C			UST D			UST E		
	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ
1,2,4-Trichlorobenzene	350	U		360	U		350	U		360	U		380	U	
1,2-Dichlorobenzene	350	U		360	U		350	U		360	U		380	U	
1,3-Dichlorobenzene	350	U		360	U		350	U		360	U		380	U	
1,4-Dichlorobenzene	350	U		360	U		350	U		360	U		380	U	
2,2'-oxybis(1-Chloropropane)	350	U		360	U		350	U		360	U		380	U	
2,4,5-Trichlorophenol	350	U		360	U		350	U		360	U		380	U	
2,4,6-Trichlorophenol	350	U		360	U		350	U		360	U		380	U	
2,4-Dichlorophenol	350	U		360	U		350	U		360	U		380	U	
2,4-Dimethylphenol	350	U		360	U		350	U		360	U		380	U	
2,4-Dinitrophenol	1700	U	UJ,r	1700	U	UJ,r	1700	U	UJ,r	1700	U	UJ,r	1800	U	UJ,r
2,4-Dinitrotoluene	350	U		360	U		350	U		360	U		380	U	
2,6-Dinitrotoluene	350	U		360	U		350	U		360	U		380	U	
2-Chloronaphthalene	350	U		360	U		350	U		360	U		380	U	
2-Chlorophenol	350	U		360	U		350	U		360	U		380	U	
2-Methylnaphthalene	350	U		360	U		350	U		360	U		380	U	
2-Methylphenol	350	U		360	U		350	U		360	U		380	U	
2-Nitroaniline	1700	U		1700	U		1700	U		1700	U		1800	U	
2-Nitrophenol	350	U		360	U		350	U		360	U		380	U	
3,3'-Dichlorobenzidine	1700	U		1700	U		1700	U		1700	U		1800	U	
3-Nitroaniline	1700	U		1700	U		1700	U		1700	U		1800	U	
4,6-Dinitro-2-methylphenol	1700	U		1700	U		1700	U		1700	U		1800	U	
4-Bromophenyl phenyl ether	350	U		360	U		350	U		360	U		380	U	
4-Chloro-3-methylphenol	350	U		360	U		350	U		360	U		380	U	
4-Chloroaniline	350	U		360	U		350	U		360	U		380	U	
4-Chlorophenyl phenyl ether	350	U		360	U		350	U		360	U		380	U	
4-Methylphenol	700	U		710	U		690	U		710	U		760	U	
4-Nitroaniline	1700	U		1700	U		1700	U		1700	U		1800	U	
4-Nitrophenol	1700	U		1700	U		1700	U		1700	U		1800	U	
Acenaphthene	350	U		360	U		350	U		360	U		380	U	
Acenaphthylene	350	U		360	U		350	U		360	U		380	U	
Anthracene	350	U		360	U		350	U		360	U		380	U	
Benzo(a)anthracene	350	U		360	U		350	U		360	U		380	U	
Benzo(a)pyrene	350	U		360	U		350	U		360	U		380	U	
Benzo(b)fluoranthene	350	U		360	U		350	U		360	U		380	U	
Benzo(ghi)perylene	350	U		360	U		350	U		360	U		380	U	
Benzo(k)fluoranthene	350	U		360	U		350	U		360	U		380	U	
bis(2-Chloroethoxy)methane	350	U		360	U		350	U		360	U		380	U	
bis(2-Chloroethyl) ether	350	U		360	U		350	U		360	U		380	U	
bis(2-Ethylhexyl) phthalate	350	U		360	U		350	U		110	J		380	U	
Butyl benzyl phthalate	350	U		360	U		350	U		360	U		380	U	
Carbazole	350	U		360	U		350	U		360	U		380	U	
Chrysene	350	U		360	U		350	U		360	U		380	U	
Di-n-butyl phthalate	350	U		360	U		350	U		360	U		380	U	
Di-n-octyl phthalate	350	U		360	U		350	U		360	U		380	U	
Dibenzo(a,h)anthracene	350	U		360	U		350	U		360	U		380	U	
Dibenzofuran	350	U		360	U		350	U		360	U		380	U	
Diethyl phthalate	350	U		360	U		350	U		360	U		380	U	
Dimethyl phthalate	350	U		360	U		350	U		360	U		380	U	
Fluoranthene	350	U		360	U		350	U		360	U		380	U	
Fluorene	350	U		360	U		350	U		360	U		380	U	
Hexachlorobenzene	350	U		360	U		350	U		360	U		380	U	
Hexachlorobutadiene	350	U		360	U		350	U		360	U		380	U	
Hexachlorocyclopentadiene	1700	U		1700	U	UJ,r	1700	U	UJ,r	1700	U	UJ,r	1800	U	UJ,r
Hexachloroethane	350	U		360	U		350	U		360	U		380	U	
Indeno(1,2,3-cd)pyrene	350	U		360	U		350	U		360	U		380	U	
Isophorone	350	U		360	U		350	U		360	U		380	U	
N-Nitrosodi-n-propylamine	350	U		360	U		350	U		360	U		380	U	
N-Nitrosodiphenylamine	350	U	UJ,r	360	U		350	U		360	U		380	U	
Naphthalene	350	U		360	U		350	U		360	U		380	U	
Nitrobenzene	350	U		360	U		350	U		360	U		380	U	
Pentachlorophenol	1700	U		1700	U		1700	U		1700	U		1800	U	
Phenanthrene	350	U		360	U		350	U		360	U		380	U	
Phenol	350	U	UJ,r	360	U		350	U		360	U		380	U	
Pyrene	350	U		360	U		350	U		360	U		380	U	

Notes:
Samples analyzed by USEPA Method 8270C.
Results are reported in milograms per kilogram (µg/Kg).
FQ = Final Qualifier.
Samples were collected on 7/1/03.

Qualifiers:
U = Non-detect.
UJ = Calibration is out of range.
J = Estimated result.
r = linearity failure in initial calibration.

SYLS0020769

Table 4

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Seven Trent Laboratory
Tank Cell 2 V10
Metals

Compound	01117-C-EX-S-02V10USTA-09.0-S2			01118-C-EX-S-02V10USTB-09.0-S2			01119-C-EX-S-02V10USTC-09.0-S2			01120-C-EX-S-02V10USTD-09.0-S2			01121-C-EX-S-02V10USTE-10.0-S2		
	UST A			UST B			UST C			UST D			UST E		
	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ	Result	Qualifier	FQ
Aluminum	2640			2600			1090			3700			840		
Antimony	1.1	U	UJ,m	1.1	U	UJ,m	1.1	U		1.1	U		1.2	U	U
Arsenic	1.7			1.2			0.38	B		3.5			0.71	B	B
Barium	9	B		7.5	B		3.4	B		16	B		4.2	B	B
Beryllium	0.16	B		0.13	B		0.074	B		0.15	B		0.044	B	B
Cadmium	0.53	U		0.15	B		0.52	U		0.06	B		0.58	U	U
Calcium	234	B	J,m	303	B	J,m	89.9	B		2280			55.9	B	B
Chromium	4.4			3.2			1.8			14.6			1.2		
Cobalt	3.4	B		1.6	B		0.8	B		3.1	B		0.66	B	B
Copper	5.5	N*	J,m	3.7	N*	J,m	1.8	BN*		10.8	N*		2	BN*	BN*
Iron	5650			4240			2360			7730			3300		
Lead	2.6			1.9			0.82			6.1			0.7		
Magnesium	411	B		361	B		149	B		938			145	B	B
Manganese	140			64.1		J,s	30.7			108			51.3		
Nickel	6.4			5.7			2	B		24.2			1.4	B	B
Potassium	533	U		540	U		523	U		541	U		576	U	U
Selenium	0.32	B		0.54	U		0.26	B		0.54	U		0.58	U	U
Silver	0.11	B		0.18	B		1.1	U		0.07	B		1.2	U	U
Sodium	25.9	BE		27.2	BE		18.2	BE		96.8	BE		19.1	BE	BE
Thallium	0.63	B		0.6	B		1.1	U		1.1			0.52	B	B
Vanadium	4.9	B		5.1	B		2	B		13.8			2	B	B
Zinc	12.9			34.8			7.1			24.6			7.2		
Mercury	0.036	U		0.036	U		0.035	U		0.025	B		0.038	U	U

Notes:
Samples were analyzed by USEPA Method 6010B and 7471A for Mercury.
Results are reported in milograms per kilogram (mg/Kg).
FQ = Final Qualifier.
Samples were collected on 7/1/03.

Qualifiers:
B = Estimated result. Result is less than reporting limit.
N* = MS/MSD recovery outside the control limits.
E = Quality control failure, dilution out of range.
U = Non-detect.
UJ= Calibration is out of range.
J = Estimated result.
r= Linearity failure in initial calibration.
m = MS/MSD recovery failure.

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Table 5

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

On-Site Gamma Spectroscopy System
Tank Cell 2 V10
Radiological Data Summary

Location	Radionuclide	On-site Activity Concentration	2-Sigma Uncertainty (%)	MDA	Corrected Activity Concentration
UST "A"	Th-232	0.4138	22.26	0.008038	0.59
	U-238	20.54	14.13	4.867	27.73
	U-235	1.191	19.03	0.1131	1.52
UST "B"	Th-232	0.5803	18.71	0.008139	0.82
	U-238	80.00	8.69	8.805	108.00
	U-235	4.262	11.50	0.1643	5.46
UST "C"	Th-232	0.3373	27.27	0.0148	0.48
	U-238	23.94	13.98	5.345	32.32
	U-235	1.391	22.03	0.1059	1.78
UST "D"	Th-232	0.6107	24.11	0.01386	0.87
	U-238	40.73	10.90	7.193	54.99
	U-235	2.521	20.12	0.1669	3.23
UST "E"	Th-232	0.3167	35.49	0.0171	0.45
	U-238	39.82	12.40	7.527	53.76
	U-235	2.095	20.27	1.472	2.68

Notes:
Results, uncertainty, and MDA are reported in pico curies per gram (pCi/g).
Results are not validated.
All samples were collected at 9 feet below ground surface.
MDA - Minimum detectable activity.
Samples were collected on 7/1/03.
Corrected Activity Concentration value is determined by multiplying the **On-site Activity Concentration** reported value by the applicable correction factor:

Th-232 = **On-site Activity Concentration** * 1.42
U-238 = **On-site Activity Concentration** * 1.35
U-235 = **On-site Activity Concentration** * 1.28

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Table 6

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Severn Trent Laboratory
Tank Cell 2 V10
General Chemistry

Compound	Method	01124-C-EX-G-02V10USTG-99.9-S2 UST G				01124-C-EX-W-02V10USTL-99.9-S2 UST L			
		Units	Matrix	Result	Qualifier	Units	Matrix	Result	Qualifier
Flashpoint	1010	deg C	SO	>60.0		deg C	LI	>60.0	
pH	9045A (SO) 9040 (LI)	No Units	SO	12.6		No Units	LI	13.3	
Reactive Cyanide	7.3.3	mg/kg	SO	0.05	U	mg/kg	LI	0.25	U
Reactive Sulfide	7.3.4	mg/kg	SO	4.4	U	mg/kg	LI	22.2	U
Alkalinity	310.1	mg/L	SO	NA		mg/L	LI	35000	

Notes:
SO = Soil/Solid.
LI = Liquid.
NA = Not Available.
mg/L = milligrams per liter.
mg/Kg = milligrams per kilogram.
Samples were collected on 7/2/03.

Qualifiers:
U = Non-detect.

SYLS0020772

Table 7

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Severn Trent Laboratory
Tank Cell 2 V10
Volatile Organic Compounds

Compound	01124-C-EX-G-02V10USTG-99.9-S2				01124-C-EX-W-02V10USTL-99.9-S2			
	UST G				UST L			
	Matrix	Result	Qualifier	Final Qualifier	Matrix	Result	Qualifier	Final Qualifier
1,1,1-Trichloroethane	SO	120,000	U		LI	19,000		
1,1,2,2-Tetrachloroethane	SO	120,000	U		LI	1,000	U	
1,1,2-Trichloroethane	SO	120,000	U		LI	1,000	U	
1,1-Dichloroethane	SO	450,000			LI	35,000		
1,1-Dichloroethene	SO	120,000	U		LI	1,000	U	
1,2-Dichlorobenzene	SO	250,000	U		LI	1,000	U	
1,2-Dichloroethane	SO	120,000	U		LI	1,000	U	
1,2-Dichloropropane	SO	120,000	U		LI	1,000	U	
1,3-Dichlorobenzene	SO	250,000	U		LI	1,000	U	
1,4-Dichlorobenzene	SO	250,000	U		LI	1,000	U	
2-Butanone	SO	500,000	U	R,c	LI	5,000	U	R,c
2-Hexanone	SO	500,000	U		LI	5,000	U	UJ,r
4-Methyl-2-pentanone (MIBK)	SO	500,000	U		LI	5,000	U	
Acetone	SO	500,000	U	R,c	LI	2,000	U	R,c
Benzene	SO	120,000	U		LI	1,000	U	
Bromodichloromethane	SO	120,000	U		LI	1,000	U	
Bromoform	SO	120,000	U		LI	1,000	U	
Bromomethane	SO	500,000	U		LI	2,000	U	R,c
Carbon disulfide	SO	120,000	U		LI	1,000	U	
Carbon tetrachloride	SO	120,000	U		LI	1,000	U	
Chlorobenzene	SO	120,000	U		LI	1,000	U	

Notes:
Samples were analyzed by USEPA Method 8260B.
µg/Kg = micrograms per kilogram.
µg/L = micrograms per liter.
Results are reported in µg/Kg for soils and µg/L for liquid.
SO = Solid/Soil.
LI = Liquid.
NR = Not Reported.
Samples were collected on 7/2/03.

Qualifiers:
U = Non-detect.
B = Blank Contamination.
UJ= Calibration is out of range.
J = Estimated result.
R = The data is unusable.
NJ = Tentatively identified compound (TIC), value is estimated concentration.
c= Calibration failure poor or unstable response.
r= linearity failure in initial calibration.
t = Tentatively identified compound (TIC).
z= Method blank and/or storage blank contamination.

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GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Severn Trent Laboratory
Tank Cell 2 V10
Volatile Organic Compounds

Compound	01124-C-EX-G-02V10USTG-99.9-S2				01124-C-EX-W-02V10USTL-99.9-S2			
	UST G				UST L			
	Matrix	Result	Qualifier	Final Qualifier	Matrix	Result	Qualifier	Final Qualifier
Chloroethane	SO	250,000	U		LI	2,000	U	
Chloroform	SO	120,000	U		LI	1,000	U	
Chloromethane	SO	250,000	U		LI	2,000	U	
cis-1,2-Dichloroethene	SO	120,000	U		LI	1,000	U	
cis-1,3-Dichloropropene	SO	120,000	U		LI	1,000	U	
Dibromochloromethane	SO	120,000	U		LI	1,000	U	
Ethylbenzene	SO	120,000	U		LI	1,000	U	
Methylene chloride	SO	340,000	B	U,z	LI	4,800	B	U,z
Styrene	SO	120,000	U		LI	1,000	U	
Tetrachloroethene	SO	11,000,000			LI	38,000		
Toluene	SO	120,000	U		LI	1,000	U	
trans-1,2-Dichloroethene	SO	120,000	U		LI	1,000	U	
trans-1,3-Dichloropropene	SO	120,000	U		LI	1,000	U	
Trichloroethene	SO	120,000	U		LI	290	J	
Vinyl chloride	SO	250,000	U		LI	1,000	U	
Xylenes (total)	SO	120,000	U		LI	1,000	U	
Dodecane (TIC)	SO	250,000	NJ	NJ,t	LI	NR		

Notes:
Samples were analyzed by USEPA Method 8260B.
µg/Kg = micrograms per kilogram.
µg/L = micrograms per liter.
Results are reported in µg/Kg for soils and µg/L for liquid.
SO = Solid/Soil.
LI = Liquid.
NR = Not Reported.
Samples were collected on 7/2/03.

Qualifiers:
U = Non-detect.
B = Blank Contamination.
UJ= Calibration is out of range.
J = Estimated result.
R = The data is unusable.
NJ = Tentatively identified compound (TIC), value is estimated concentration.
c= Calibration failure poor or unstable response.
r= linearity failure in initial calibration.
t = Tentatively identified compound (TIC).
z= Method blank and/or storage blank contamination.

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TABLE 8

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated - Hicksville New York

Severn Trent Laboratory
Tank Cell 2 V10
TCLP GC/MS Volatiles

Compound	01124-C-EX-G-02V10USTG-99.9-S2				01124-C-EX-W-02V10USTL-99.9-S2			
	Matrix	Result	Qualifier	Final Qualifier	Matrix	Result	Qualifier	Final Qualifier
1,1-Dichloroethene	SO	1,200	U		LI	250	U	R,s
1,2-Dichloroethane	SO	65	J		LI	250	U	R,s
2-Butanone	SO	5,000	U	UJ,c	LI	420	J	J,s
Benzene	SO	1,200	U		LI	250	U	R,s
Carbon tetrachloride	SO	1,200	U		LI	250	U	R,s
Chlorobenzene	SO	1,200	U		LI	250	U	R,s
Chloroform	SO	1,200	U		LI	250	U	R,s
Tetrachloroethene	SO	35,000			LI	5,100		J,s
Trichloroethene	SO	380	J		LI	55	J	J,s
Vinyl chloride	SO	2,500	U		LI	250	U	R,s

Notes:
Samples were analyzed by USEPA Method 8260B and TCLP Method 1311.
µg/Kg = micrograms per kilogram.
µg/L = micrograms per liter.
Results are reported in µg/Kg for soils and µg/L for liquid.
TCLP - Toxicity Characteristic Leaching Procedure.
SO = Solid/Soil.
LI = Liquid.
Samples were collected on 7/2/03.

Qualifiers:
U = Non-detect.
UJ = Calibration is out of range.
J = Estimated value.
R = Data unusable due to quality control failures.
c = Calibration failure.
s = Surrogate failure.

SYLS0020775

Table 9

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Severn Trent Laboratory
Tank Cell 2 V10
TCLP Organochlorine Pesticides

Compound	01124-C-EX-G-02V10USTG-99.9-S2				01124-C-EX-W-02V10USTL-99.9-S2			
	UST G				UST L			
	Matrix	Result	Qualifier	Final Qualifier	Matrix	Result	Qualifier	Final Qualifier
Chlordane (technical)	SO	5	U		LI	500	U	
Endrin	SO	0.5	U		LI	50	U	
gamma-BHC (Lindane)	SO	0.5	U	UJ, m	LI	50	U	UJ, m
Heptachlor	SO	0.5	U		LI	50	U	
Heptachlor epoxide	SO	0.5	U		LI	50	U	
Methoxychlor	SO	1	U		LI	100	U	
Toxaphene	SO	20	U		LI	2,000	U	

Notes:
Samples were analyzed by USEPA Method 8081A and TCLP Method 1311.
µg/Kg = micrograms per kilogram.
µg/L = micrograms per liter.
Results are reported in µg/Kg for soils and µg/L for liquid.
TCLP - Toxicity Characteristic Leaching Procedure.
SO = Soil/Solid.
LI = Liquid.
Samples were collected on 7/2/03.

Qualifiers:
U = Non-detect.
UJ = Calibration is out of range.
m = MS/MSD recovery failure.

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Table 10

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville New York

Severn Trent Laboratory
Tank Cell 2 V10
TCLP - Semivolatile Organic Compounds

Compound	01124-C-EX-G-02V10USTG-99.9-S2				01124-C-EX-W-02V10USTL-99.9-S2			
	UST G				UST L			
	Matrix	Result	Qualifier	Final Qualifier	Matrix	Result	Qualifier	Final Qualifier
1,4-Dichlorobenzene	SO	67	U		LI	1000	U	
2,4,5-Trichlorophenol	SO	67	U		LI	1000	U	R,s
2,4,6-Trichlorophenol	SO	67	U		LI	1000	U	R,s
2,4-Dinitrotoluene	SO	67	U	UJ,r	LI	1000	U	UJ,r
2-Methylphenol	SO	67	U		LI	1000	U	R,s
3-Methylphenol & 4-Methylphenol	SO	130	U		LI	2000	U	R,s
Hexachlorobenzene	SO	67	U		LI	1000	U	
Hexachlorobutadiene	SO	67	U		LI	1000	U	
Hexachloroethane	SO	67	U		LI	1000	U	
Nitrobenzene	SO	67	U		LI	1000	U	
Pentachlorophenol	SO	330	U		LI	1000	U	R,s
Pyridine	SO	130	U		LI	2000	U	

Notes:

Samples were analyzed by USEPA Method 8270C and TCLP Method 1311.
μg/Kg = micrograms per kilogram.
μg/L = micrograms per liter.
Results are reported in μg/Kg for soils and μg/L for liquid.
TCLP - Toxicity Characteristic Leaching Procedure.
SO = Solid/Soil.
LI = Liquid.
Samples were collected on 7/2/03.

Qualifiers:

UJ = Calibration is out of range.
U = Non-detect.
R = Data unusable due to quality control failures.
s = Surrogate failure.

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Table 11

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville New York

Severn Trent Laboratory
Tank Cell 2 V10
TCLP Metals

Compound	01124-C-EX-G-02V10USTG-99.9-S2				01124-C-EX-W-02V10USTL-99.9-S2			
	UST G				UST L			
	Matrix	Result	Qualifier	Final Qualifier	Matrix	Result	Qualifier	Final Qualifier
Arsenic	SO	8.8	B		LI	166.0	B	
Barium	SO	171.0	B	J,s	LI	573.0	B,E	J,s
Cadmium	SO	4.6	B	J,o	LI	125.0	U	
Chromium	SO	48.5	B		LI	80.3	B	
Copper	SO	1,690.0			LI	764.0		
Lead	SO	65.4	B	J,w	LI	330.0	B	J,w
Selenium	SO	500.0	U		LI	2,500.0	U	
Silver	SO	51.0			LI	250.0	U	
Zinc	SO	410.0			LI	260.0	B	
Mercury	SO	10.0	U	UJ,w	LI	10.0	U	UJ,w

Notes:

Samples were analyzed by USEPA Methods 6010B and 7470A for Mercury TCLP Method 1311.
µg/Kg = micrograms per kilogram.
µg/L = micrograms per liter.
Results are reported in µg/Kg for soils and µg/L for liquid.
TCLP - Toxicity Characteristic Leaching Procedure.
SO = Solid/Soil.
LI = Liquid.
Samples were collected on 7/2/03.

Qualifiers:

B = Result between MDL & reporting limit.
E = ICP series dilution out of range.
U = Non-detect.
UJ = Calibration is out of range.
J = Estimated value.
o = Calibration blank contamination.
s = Serial dilution failure.
w = tracer recovery failure.

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Table 12

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville New York

Severn Trent Laboratory
Tank Cell 2 V10
TCLP Chlorinated Herbicides

Compound	01124-C-EX-G-02V10USTG-99.9-S2				01124-C-EX-W-02V10USTL-99.9-S2			
	UST G				UST L			
	Matrix	Result	Qualifier	Final Qualifier	Matrix	Result	Qualifier	Final Qualifier
2,4,5-TP (Silvex)	SO	10	U		LI	1000 R	U	R,s
2,4-D	SO	40	U		LI	4000 R	U	R,s

Notes:

Samples were analyzed by USEPA Method 8151A and TCLP Method 1311.
μg/Kg = micrograms per kilogram.
μg/L = micrograms per liter.
Results are reported in μg/Kg for soils and μg/L for liquid.
Results are reported in micrograms per kilogram (μg/Kg).
TCLP - Toxicity Characteristic Leaching Procedure.
SO = Soil/Solid.
LI = Liquid.
Samples collected on 7/2/03.

Qualifiers:
U = Non-detect
R = Rejected during data validation.
s = Surrogate failure.

SYLS0020779

Table 13

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Severn Trent Laboratory
Tank Cell 2 V10
Radiological Data Summary

Radionuclide	Method	01124-R-EX-G-02V10USTG-99.9-S2 UST G					01124-R-EX-W-02V10USTL-99.9-S2 UST L				
		Matrix	Result	Qualifier	FQ	Uncertainty	Matrix	Result	Qualifier	FQ	Uncertainty
Thorium 228	3004/RP-725	SO	68			34	LI	4,800			1,300
Thorium 230	3004/RP-725	SO	83			38	LI	2,340			820
Thorium 232	3004/RP-725	SO	111			45	LI	3,400			1,100
Uranium 234	3050/RP-725	SO	23,500		J,I	2,800	LI	231,000			28,000
Uranium 235	3050/RP-725	SO	1,290			220	LI	13,000			2,400
Uranium 238	3050/RP-725	SO	24,500			3,000	LI	235,000			28,000
Actinium 228	GA-01-R MOD	SO	47			13	LI	4,200		J,I	1,100
Bismuth 212	GA-01-R MOD	SO	23			12	LI	2,860			680
Bismuth 214	GA-01-R MOD	SO	2.3		U,Q	1.4	LI	23	U		37
Cesium 137	GA-01-R MOD	SO	NR				LI	64	U	UJ,I	1,100
Lead 212	GA-01-R MOD	SO	43.6			5.5	LI	4,080		J,I	470
Lead 214	GA-01-R MOD	SO	2.1	U	U,Q	1.3	LI	89	U	UJ,I	54
Potassium 40	GA-01-R MOD	SO	NR				LI	1,030		J,I	430
Radium (226)	GA-01-R MOD	SO	3.9	U	U,Q	2.4	LI	NR			
Radium 228	GA-01-R MOD	SO	41.8			8.2	LI	3,460			440
Thallium 208	GA-01-R MOD	SO	15.1			2.6	LI	1,340			200

Notes:
Results and uncertainty are reported in pCi/g for solids and pCi/L for liquid.
Isotopic Thorium analyzed by Method 3004/RP-725.
Isotopic Uranium analyzed by Method 3050/RP-725.
Gamma Spectroscopy run using Method GA-01-R MOD.
pCi/g = pico curies per gram.
pCi/L = pico curies per liter.
SO = Soil/Solid.
LI = Liquid.
NR = Not reported.
Samples collected on 7/2/03.

Qualifiers:
U = Non-detect.
UJ = Calibration is out of range.
J = Estimated value.
I = Laboratory Control Standard recovery failure.
Q = Result is less than sample dectection limit.

SYLS0020780

FIGURES

Figure 1
Cell and Subcell Locations

Legend

- Building
- Property Line
- Subcell Boundaries
- Cell Boundaries

N

Feet
0 30 60

Projection Information
Stateplane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00089-1 URS27010-038

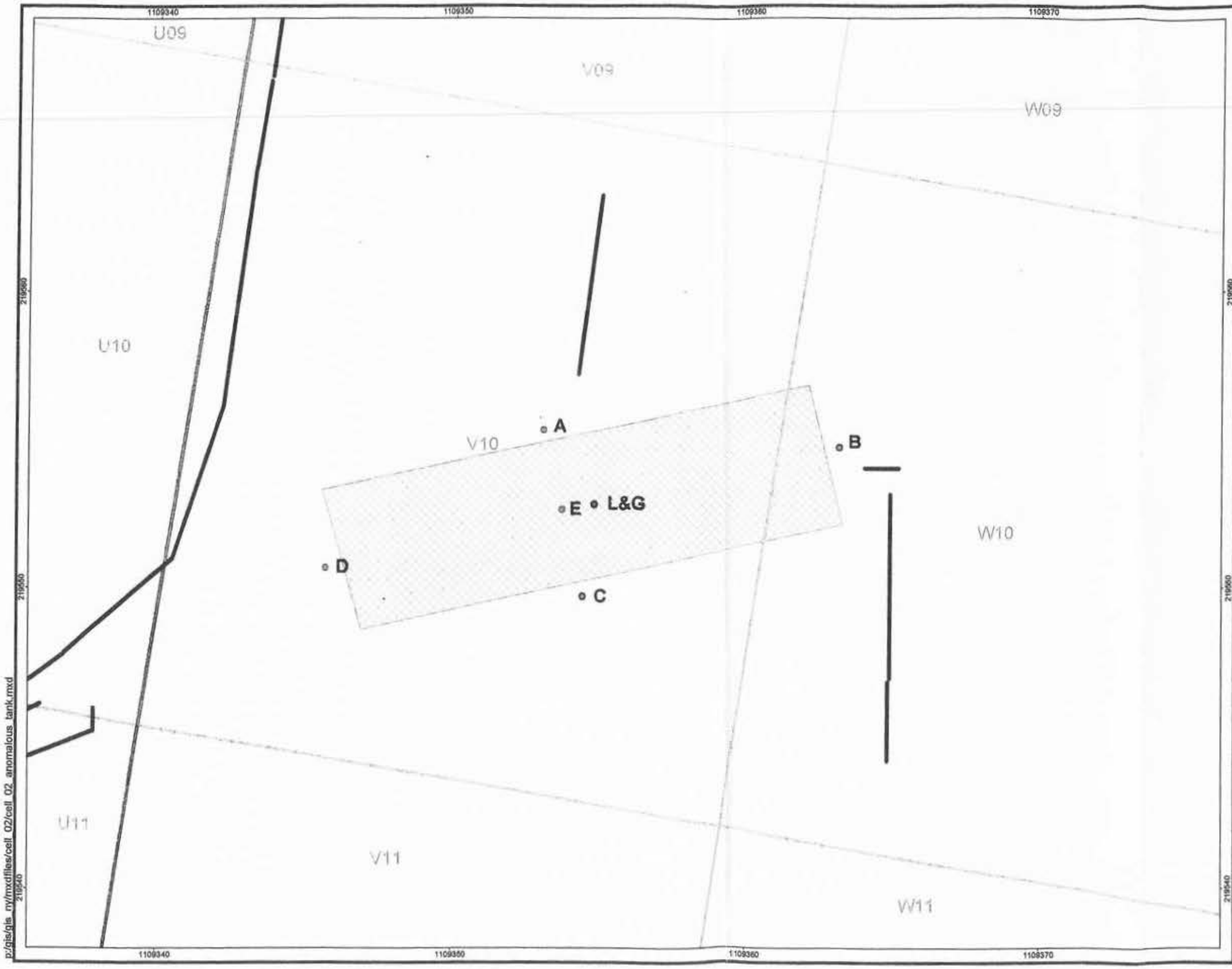
GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

ENVIROCON
Relationships Build Successful Projects

DESTINY
RESOURCES, INC.

DRI ID: 1006.H5074 December 10, 2003

Figure 2
Cell 2 Tank



Legend

- Exterior Sample
- Content Sample
- Pipe
- Tank
- Subcell Boundaries
- Cell Boundaries

N

Feet
0 2.5 5

Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00089-1 URS27010-039

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

ENVIROCON
Relationships Build Successful Projects

DESTINY
RESOURCES, INC.

DRI ID: 1006.H5396 December 10, 2003

APPENDIX A

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	**NYSDEC#** V00089-1 **URS #** 27010-039

Photo No. 1 **Date:** 7-1-03

Direction Photo Taken:
Northeast

Description:

Partially uncovered tank located within enclosure of Cell 2.

Photo No. 2 **Date:** 7-1-03

Direction Photo Taken:
East

Description:

Vertical pipe located on the top middle of the tank.

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	NYSDEC# V00089-1 URS # 27010-039

Photo No. 3 **Date:** 7-1-03

Direction Photo Taken:
Northeast

Description:

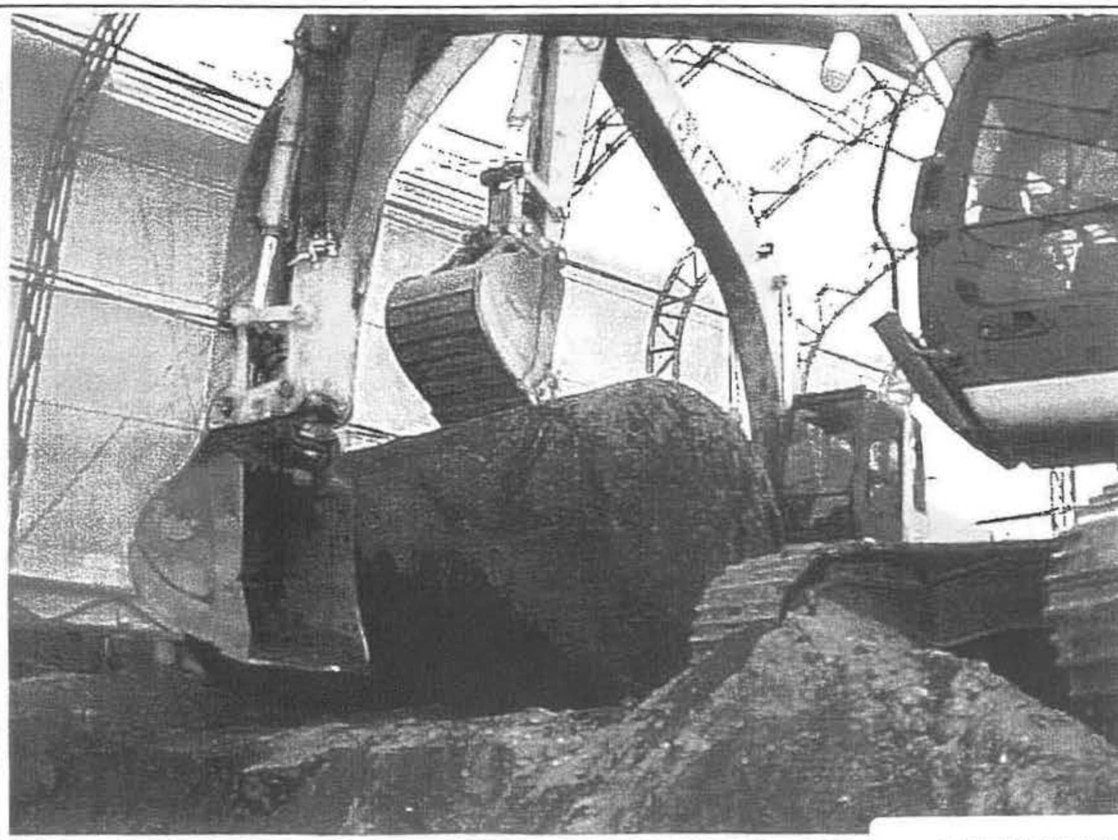
Tank being removed from the ground by the excavator.

Photo No. 4 **Date:** 7-1-03

Direction Photo Taken:
Southeast

Description:

Tank being removed from the ground by the excavators.



SYLS0020786

URS **PHOTOGRAPHIC LOG**

Client Name:	**Site Location:**	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	**NYSDEC#** V00089-1 **URS #** 27010-039

Photo No. 5	**Date:** 7-2-03
Direction Photo Taken: South	
Description: Survey of tank and sludge and liquid sampling.	

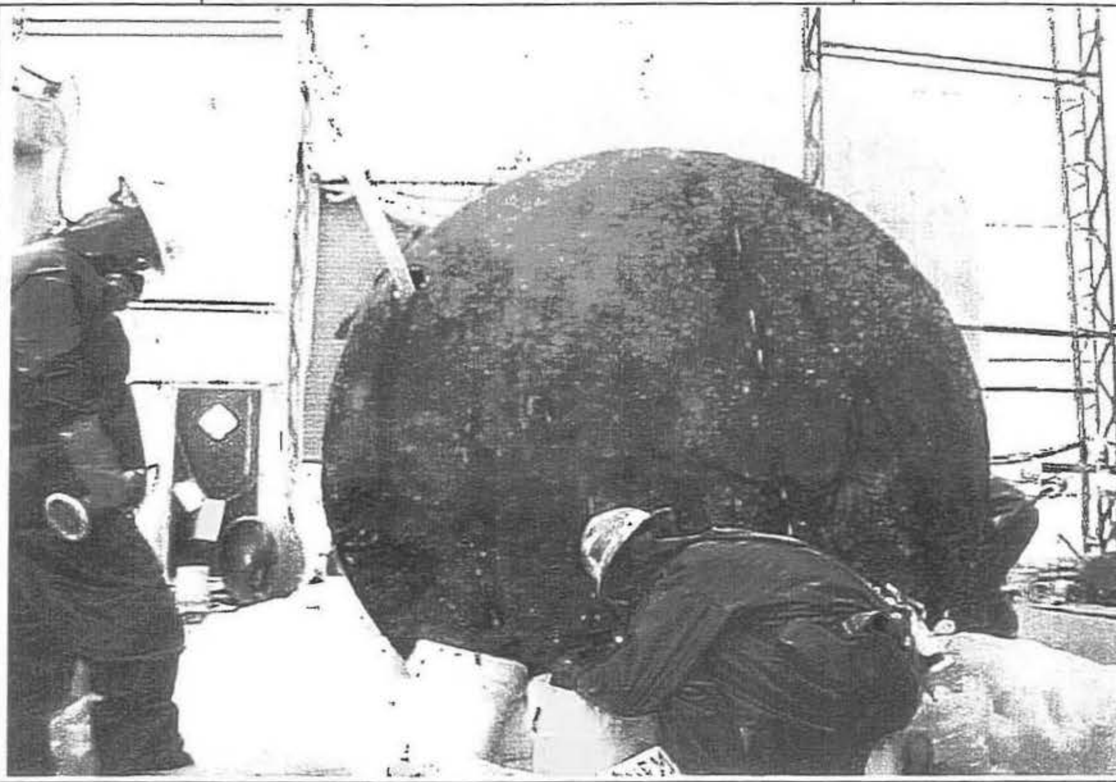


Photo No. 6	**Date:** 7-2-03
Direction Photo Taken: East	
Description: Opening being closed.	

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	NYSDEC# V00089-1 URS # 27010-039

Photo No. 7 **Date:** 7-2-03

Direction Photo Taken:
NA

Description:
Sludge and liquid sampling.

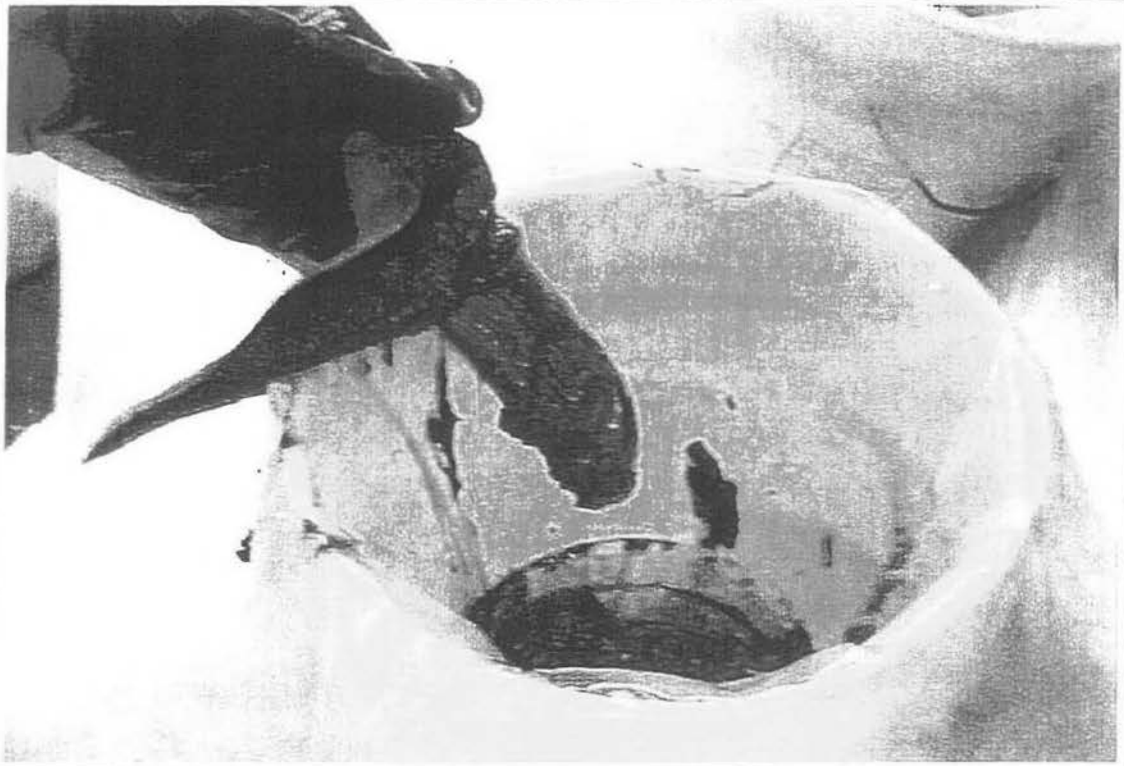


Photo No. 8 **Date:** 7-2-03

Direction Photo Taken:
NA

Description:

Sample collection.

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	**NYSDEC#** V00089-1 **URS** # 27010-039

Photo No. 9 **Date:** 9-16-03

Direction Photo Taken:
Northeast

Description:

Temporary staging of tank in the 140 Building.

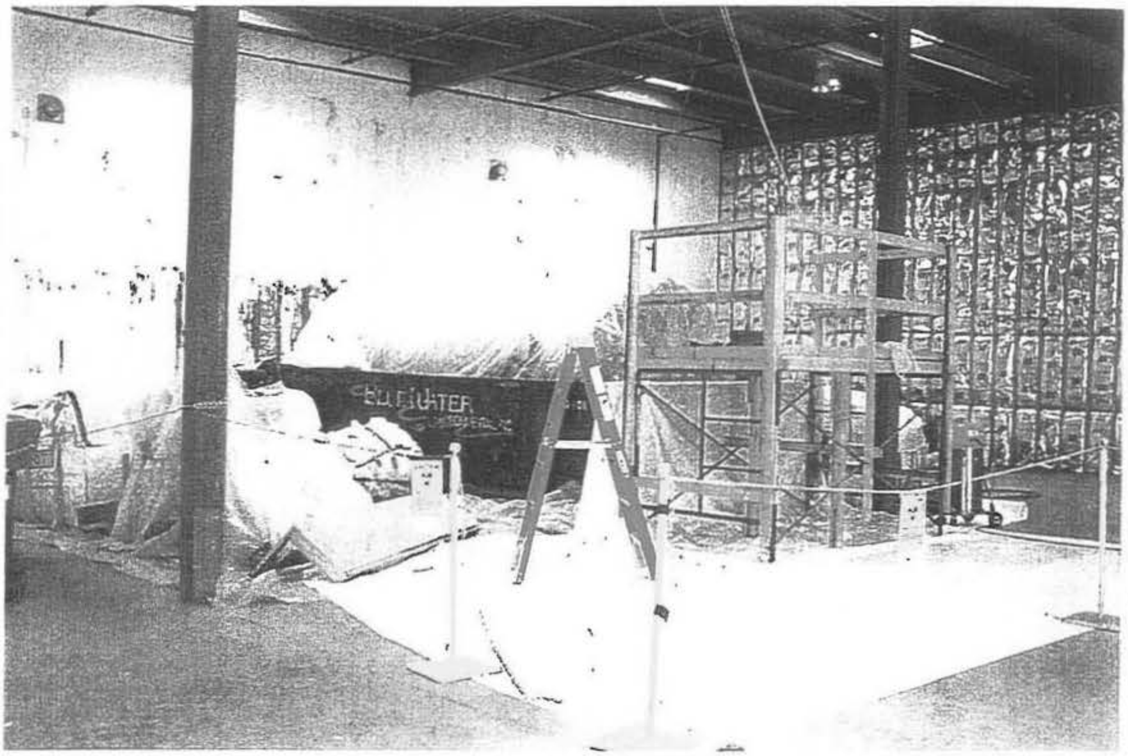


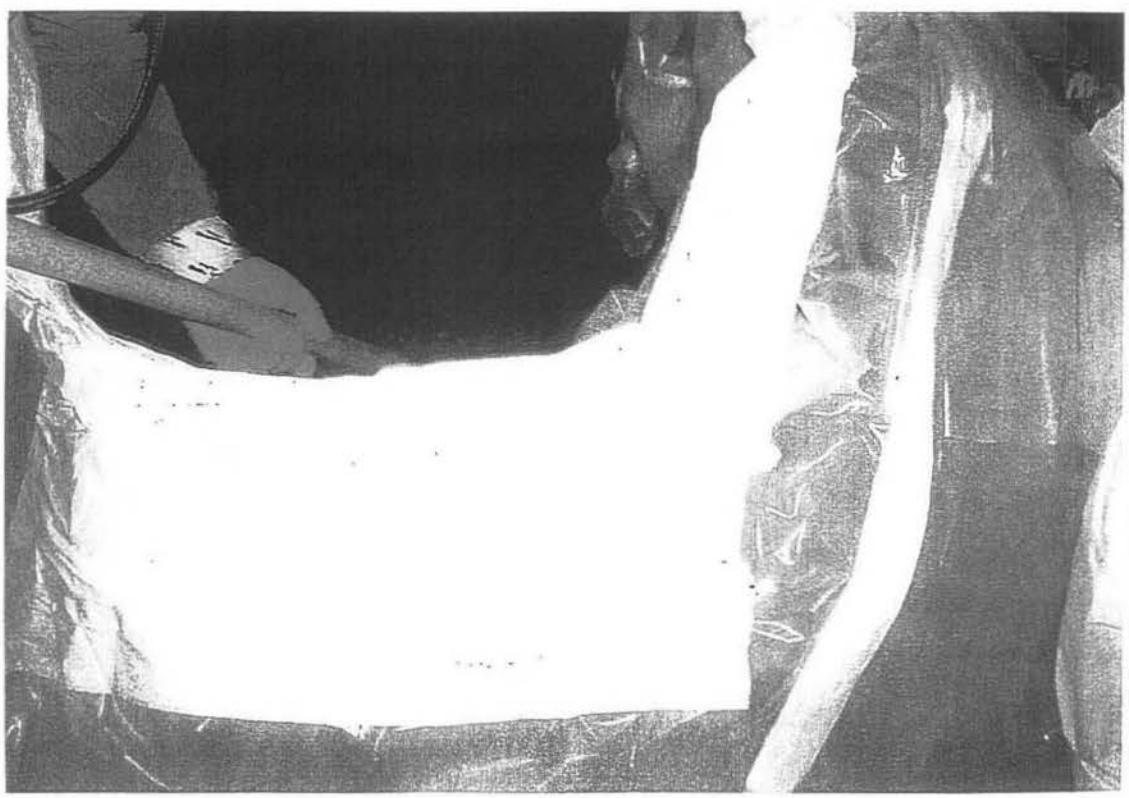
Photo No. 10 **Date:** 9-16-03

Direction Photo Taken:

North

Description:

Gel sorbent addition and mixing.



URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	NYSDEC# V00089-1 URS # 27010-039

Photo No. 11 **Date:** 9-16-03

Direction Photo Taken:
North

Description:

Residual material remaining in tank.

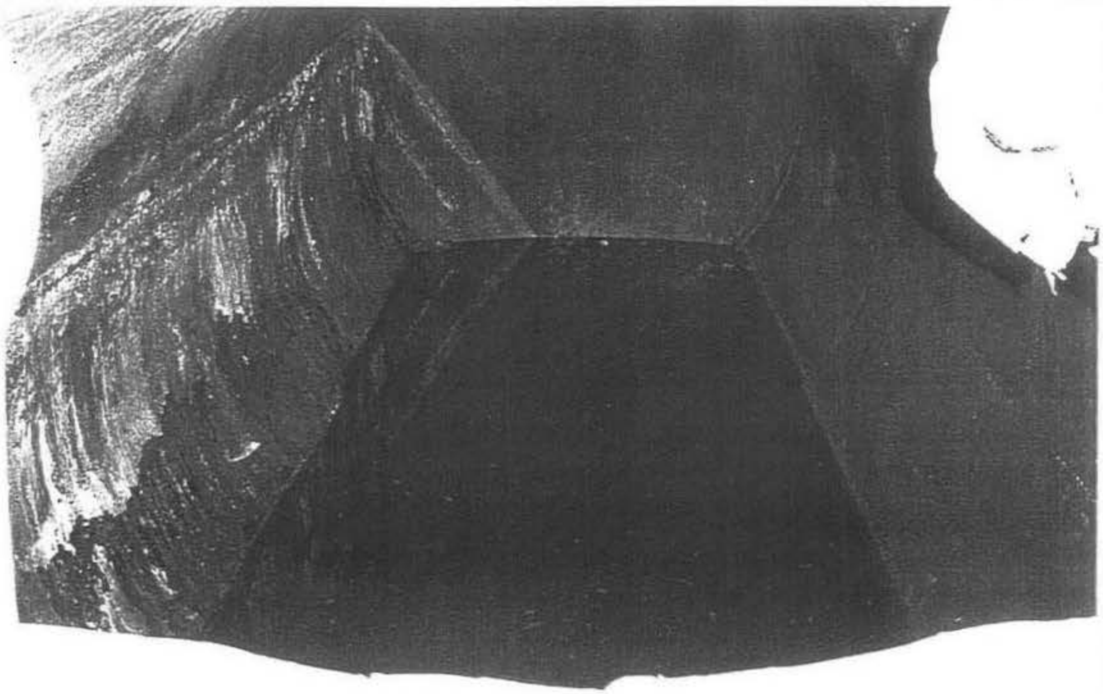


Photo No. 12 **Date:** 9-18-03

Direction Photo Taken:
North

Description:

Gel sorbent taking up residual material remaining in tank.

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	NYSDEC# V00089-1 URS # 27010-039

Photo No. 13 **Date:** 9-24-03

Direction Photo Taken: Northeast

Description:

Shipping Container

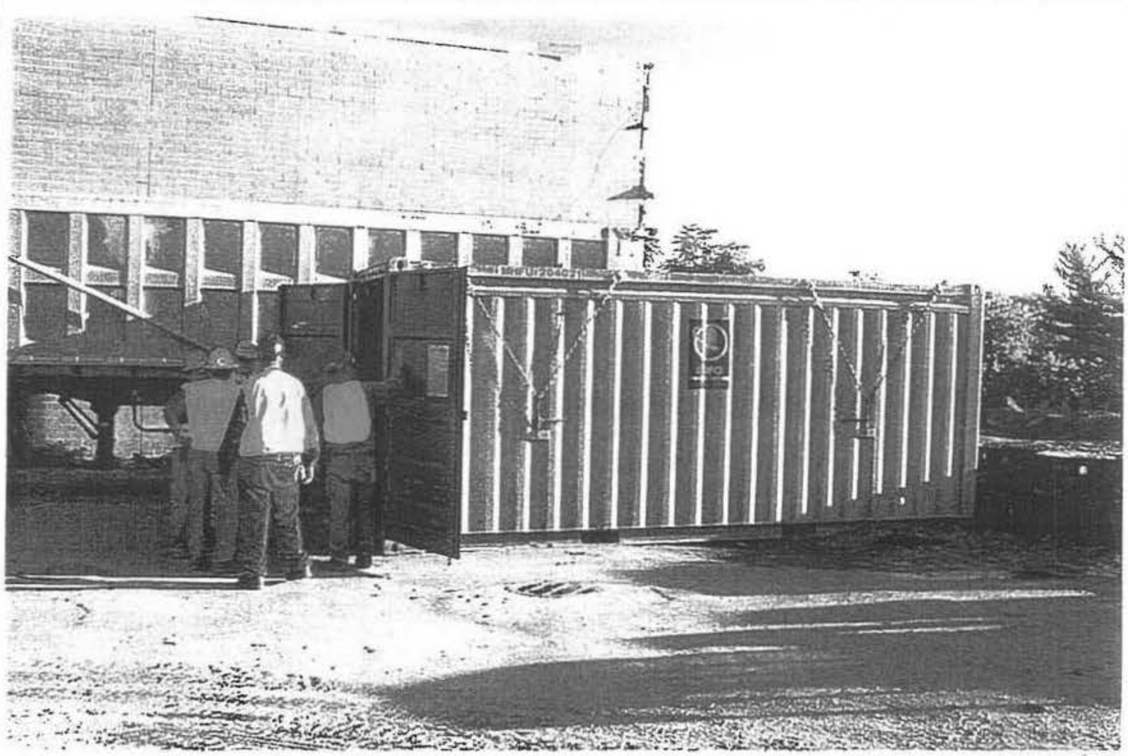
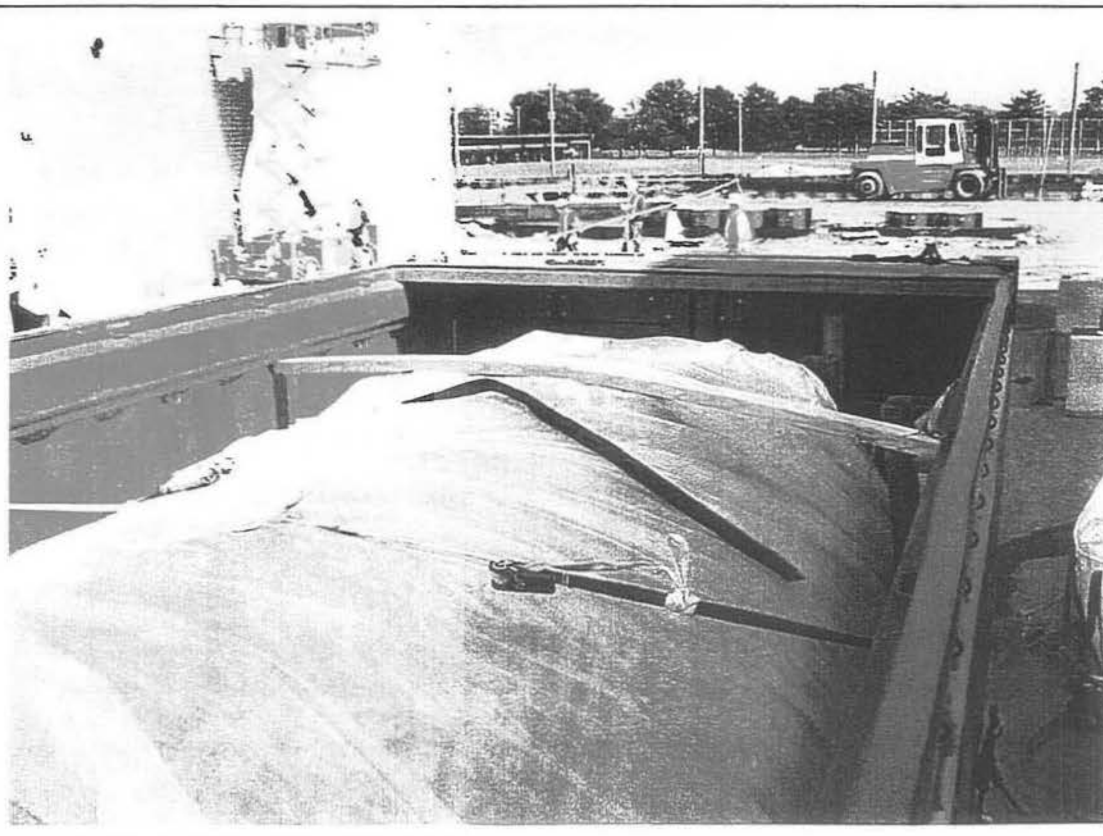


Photo No. 14 **Date:** 9-24-03

Direction Photo Taken: East

Description:

Shipping Container with tank secured.



APPENDIX B

Appendix B

Liqui-Sorb®200 Pilot Study

EXPERIMENT FOR SOLIDIFYING TANK CONTENTS IN CELL 2 USING LIQUI-SORB® 200 ABSORBANT

Prepared by: Stone Environmental Inc.

For: GTE Operations Support Incorporated

INTRODUCTION:

In order to transport a tank from the Former Sylvania Electric Products Incorporated Facility in Hicksville, New York (the "Site"), samples of the tank contents were evaluated as to whether they could be solidified through the addition of an absorbent material, specifically Liqui-Sorb® 200. The amount of absorbent required to adequately solidify the waste (sludge and/or liquid), on a mass of absorbent per volume of waste basis, was being evaluated. The evaluation was conducted on September 16, 2003, at the Site.

BACKGROUND:

On July 1, 2003, a tank containing both liquid and sludge was uncovered in Cell 2. Based on the analytical testing performed on the contents of the tank, the two most notable chemical characteristics of the tank contents are as follows:

- Appreciable amounts of tetrachloroethene (PCE) are present in both the aqueous and sludge portion of the tank contents. Heat generating (exothermic) reactions involving chlorinated solvents are known to produce very toxic chlorinated gases. The reactions involved in this experiment were not expected to be exothermic, however, an evaluation of the heat generated during the course of this experiment was made.

- The pH of the aqueous and sludge phases is 13.3 and 12.6, respectively. Materials of this pH are known to be caustic and should be handled accordingly.

OBJECTIVE OF EXPERIMENT:

The objectives of the experiment were to:

- Evaluate the amount of Liqui-Sorb® 200 required to solidify any liquids above and within the sludge.

- Evaluate whether the addition of Liqui-Sorb® 200 to a sample of the tank contents would create an exothermic reaction, potentially causing adverse off gassing of toxic materials.

MATERIALS AND METHODS:

In an attempt to solidify the liquid samples, the following procedure was followed:

- Bulk samples of liquid were collected from the tank and transferred into 1 gallon wide-mouth polypropylene bottles.
- Four 100-milliliter (mL) aliquots of liquid were taken from the bulk samples.
- A balance was used to weigh out Liqui-Sorb® 200.
- The Liqui-Sorb® 200 was added to the liquid samples according to Table 1 below. The ratios represent a range of dosages, which center on the manufacturer's suggested ratio of 20 mL of water (sample) to 1 gram (g) of Liqui-Sorb® 200.
- The test mixtures were evaluated for the generation of heat by placing a thermometer into the beaker.
- At approximately ½ hour after the addition of Liqui-Sorb® 200, the effectiveness of each ratio was evaluated. A stainless steel spoon was used to evaluate the consistency of each of the test mixtures.

TABLE 1 - Liqui-Sorb® 200 Ratios Tested

Ratio of liquid absorbed per gram of Liqui-Sorb® 200	Volume of Sample (mL)	Amount of Liqui-Sorb® 200 (gram)
10	100	10
20	100	*5
40	100	2.5
100	100	1

* = Manufacturer's suggested dosage for 100 ml water.

RESULTS AND CONCLUSIONS

The results for this experiment are shown in Table 2.

TABLE 2 Sample Identification, Ratios and Observations

Sample ID	Amount of Liquid, mL	Amount of Liqui-Sorb® 200 grams	Consistency after ½ hour	Comments/Conclusions
R10	100	10	Solid	No heat generated. Adequate amount of Liqui-Sorb® 200.
R20	100	5	Solid	No heat generated. Adequate amount of Liqui-Sorb® 200.
R40	100	2.5	Liquid	No heat generated. Not enough Liqui-Sorb® 200.
R100	100	1	Liquid	No heat generated. Not enough Liqui-Sorb® 200.

The following is a brief discussion of these results:

- No heat was generated as a result of adding Liqui-Sorb® 200 (at any ratio) to the liquid contents of the tank.
- The liquid was adequately solidified for the 20:1 and 10:1 ratios. These ratios represent the milliliters of tank liquid to grams of Liqui-Sorb® 200. The manufacturer's suggested ratio is 20:1.
- The liquid was not adequately solidified for the 40:1 and 100:1 ratios.

The following are conclusions drawn from the experiment and the recommended course of action:

- Ratios of 40:1 or 100:1 should not be used for the solidification of the liquid within the tank.
- Adding the manufacturer's suggested ratio (20:1) will sufficiently solidify liquid samples of the tank contents. This is the recommended ratio to be used.

APPENDIX C

Appendix C

Shipping Manifest

NYG 3433302

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Please type or print. Do not staple

(Hazardous Waste Manifest 1/5/99)

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Doc. No.	2. Page 1 of	Information within heavy bold lines is not required by Federal Law.
	NYD002036515	00004	2	

3. Generator's Name and Mailing Address: GTE Operations Support Inc. 600 Hidden Ridge HQE03E78 Irving, TX 75038

4. Generator's Telephone Number (516) 932-9157

A. NYG 3433302

B. Generator's ID 140 Cantiague Rock Rd Hicksville NY 11801

5. Transporter 1 (Company Name) [illegible] Transport Services — 6. US EPA ID Number NYR000104976

C. State Transporter's ID

D. Transporter's Telephone (516) 777-2056

7. Transporter 2 (Company Name) New York [illegible] — 8. US EPA ID Number NYD981064625

E. State Transporter's ID VTTX91121

F. Transporter's Telephone (718) 497-3023

9. Designated Facility Name and Site Address: Envirocare of Utah, Clive Disposal Site, Interstate 80 Ex. 49 — 10. US EPA ID Number UTD982598898

G. State Facility ID

H. Facility Telephone (435) 884-0155

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ Hazardous Waste Solid, n.o.s., 9, (D039) UN 3077 Limited Quantity [illegible]	001	CM	17700	P	EPA D039 / STATE D039
b.					EPA / STATE
c.					EPA / STATE
d.					EPA / STATE

J. Additional Descriptions for Materials listed Above
a. Tetrachloroethylene
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a. Landfill L
b.
c.
d.

15. Special Handling Instructions and Additional Information
Follow ERG Book — [illegible] 24 HR# — Box SD# 3164
Pg 306+307 Guide 171 — 0840-03-
Pg 288+289 Guide 162 — Chemtrec 800-424-9300 — M068441

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Mo.	Day	Year
Jim Agostinelli	[signature]	09	25	03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Mo.	Day	Year
[illegible]	[signature]	09	25	03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Mo.	Day	Year
BRUCE DEMEGLIO	[signature]	09	26	03

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Mo.	Day	Year
Shawn DeRyke	[signature]	10	09	03

GENERATOR — TRANSPORTER — FACILITY

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the NYS Department of Environmental Conservation (518) 457-7362

COPY 5—Generator—Mailed by TSD Facility

NYG 3433329

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

Please type or print. Do not staple

(Hazardous Waste Manifest 1/5/99)

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the NYS Department of Environmental Conservation (518) 457-7362

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Doc. No.	2. Page 1 of	Information within heavy bold lines is not required by Federal Law.
NYD002036515	00004	2	

3. Generator's Name and Mailing Address
Continuation

A. NYG 3433329

B. Generator's ID

4. Generator's Telephone Number ( )

5. Transporter 1 (Company Name)	6. US EPA ID Number	C. State Transporter's ID	D. Transporter's Telephone
CSX TRANSPORTATION	FLD006921340	VTXX4031	(904) 359-7551

7. Transporter 2 (Company Name)	8. US EPA ID Number	E. State Transporter's ID	F. Transporter's Telephone
[illegible]	NYD001779910	VTTX4031	(860) 243-5916

9. Designated Facility Name and Site Address

10. US EPA ID Number

G. State Facility ID

H. Facility Telephone ( )

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.					EPA / STATE
b.					EPA / STATE
c.					EPA / STATE
d.					EPA / STATE

J. Additional Descriptions for Materials listed Above
a
b
c
d

K. Handling Codes for Wastes Listed Above
a
b
c
d

15. Special Handling Instructions and Additional Information

0890-03-NY6844

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Mo.	Day	Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Mo.	Day	Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Mo.	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Mo.	Day	Year
Shawn [illegible]	[signature]	1	09	03

COPY 5—Generator—Mailed by TSD Facility

SYLS0020800

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

Generator Name: GTE-Operations Support Incorporated   Manifest Doc. No.: 00004

Profile No.: 0840-03   State Manifest No.: NYG343302&329

Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent standards are listed on the following page. If F039, multi-source leachate applies those constituents mus be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REF #	3. US EPA HAZARDOUS WASTE CODE (S)	4. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE DESCRIPTION	NONE	5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
1	D039		☒	A1
2			☐	
3			☐	
4			☐	

To identify F039 or D001-D043 underlying hazardous constituent (s), use the "F039/Underlying Hazardous Constituent Form" provided (Form B1) and check here ☐
If no UHCs are present in the waste upon its initial generation check here: ☒
To list additional USEPA waste code(s) and subcategorie(s), use the supplemental sheet provided (Form A2) and check here: ☐

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A1, A2, B1, B2 ,B3, B4, C, D, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter A2, B1, B2, B3, B4, or D you are making the appropriate certification as provided below. States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

A1 RESTRICTED WASTE REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268.40.
☐ For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."

A2 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR Part 268.40 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B2 CONTAMINATED SOIL TREATED TO PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion units as specified in 268.42, Table 1. I have been unable to detect the nonwastewater organic constituents, despite having used best good-faith efforts to analyze for such constituents. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B4 DECHARACTERIZED WASTE CONTAINING UNDERLYING HAZARDOUS CONSTITUENTS TREATED TO PERFORMANCE STANDARDS
"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic and that underlying hazardous constituents, as defined in § 268.2(i) have been treated on-site to meet the § 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

C RESTRICTED WASTE SUBJECT TO A VARIANCE
This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension and may be land disposed without further treatment. Enter the effective date of prohibition in column 5 above.

D RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D. I believe that the information I submitted is true, accurate and complete I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

E WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS
This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [signature]   Title Vice President & Controller   Date 9/25/03

SYLS0020801

FORM 540 — Envirocare of Utah, Inc.

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): 1-800-424-9300

ORGANIZATION: Chemtrec

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? [ ] YES [✓] NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ⟹ 1

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? [✓] YES [ ] NO
If "Yes," provide Manifest Number ⟹

EPA MANIFEST NUMBER: 00004
~~NYG3133302 2003~~ 330 [illegible] 9-2?-03

5. SHIPPER -- NAME AND FACILITY:
GTEOSI
140 Cantiague Rock RD
Hicksville, NY 11801

SHIPPER I.D. NUMBER: 0840-03-001

[ ] COLLECTOR
[ ] PROCESSOR
[✓] GENERATOR TYPE (Specify) 1

Utah Generator Site Access Permit No.: 020 500 1352
SHIPMENT NUMBER: VTTX-91131

CONTACT: Jean Agostinelli

TELEPHONE NUMBER (Include Area Code): 516-932-9157

6. CARRIER -- Name and Address:
Priority Transport Services, Inc.
391 Anthony Street
Schenectady, NY 12308

EPA I.D. NUMBER: NYR000104975

SHIPPING DATE: 09/25/2003

CONTACT: Dispatch

TELEPHONE (Include Area Code): 800-235-0069

SIGNATURE -- Authorized carrier acknowledging waste receipt

DATE: 9/25/03

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 1 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): 0840-03-001

9. CONSIGNEE - Name and Facility:
Envirocare of Utah, Inc.
Clive Disposal Site (Treatment Facility)
Interstate 80, Exit 49
Clive, UT 84029
115844

CONTACT: Shipping and Receiving

TELEPHONE (Include Area Code): (435)884-0155

SIGNATURE -- Authorized consignee acknowledging waste receipt

DATE: 10/9/03

10. CERTIFICATION

This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE

TITLE: Broker GTEOSI

DATE: 9/21/03

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
RQ, Hazardous waste, solid, n.o.s., 9, (D039), NA 3077	NA	NA	Solid / OXIDES	Th-232	U-nat	8.3781E+03	1.7238E+02	NA	17700 LBS; 806 FT3	3164
										MHFU-20402 1

FOR CONSIGNEE USE ONLY

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
_/_ Other
_✓_ No Violations Detected on this Shipment

20. TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material _✓_ is (or) _✓_ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by Envirocare of Utah, Inc. and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in Envirocare of Utah, Inc.

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and Envirocare of Utah Inc.'s facility license.

D. INDEMNIFICATION: Generator agrees to indemnify Envirocare of Utah, Inc., its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (04-03)

SYLS0020802

FORM 541 — Envirocare of Utah, Inc.

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	Total
1	m3 22.8234 / ft3 806.0000	kg 6214.2159 / ton 6.8500	NP	NP	NP	NP

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE (kg)
MBq	6.3640E+03	NP	NP	NP	NP	(kg) 2.4453E+02
mCi	1.7200E+02	NP	NP	NP	NP	(tons) 2.6955E-01

2. MANIFEST NUMBER 0840-03-001

3. PAGE 1 OF 1 PAGE(S)

4. SHIPPER NAME GTEOSI

SHIPMENT ID NUMBER 0840-03-001

DISPOSAL CONTAINER DESCRIPTION

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (ton)	9. SURFACE RADIATION LEVEL (mSv/hr) / (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) / (dpm/100cm2) ALPHA	BETA-GAMMA
3164/GTEOSI	2 MHFU-204021	22.8234	8028.5855	5.0000E-04	<3.6740E-06	<3.6740E-05
		806.0000	8.8500	5.0000E-02	<2.2000E+02	<2.2000E+03
Shipment Totals		22.8234	8028.5855			
		806.0000	8.8500			

WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%
28,59-OTHER.-HJ	22.8234 / 806.0000	100	OXIDES/NONE	0.00

15. RADIOLOGICAL DESCRIPTION — INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT

RADIONUCLIDES	pCi/gm	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
Th-232 [1.5300E+00 kg]		(1.4060E+01)	(3.8000E-01)	AU
U-nat [2.4300E+02 kg]		6.3640E+03	1.7200E+02	
Subtotal		6.3640E+03	1.7200E+02	
Total		6.3640E+03	1.7200E+02	
Source [2.4453E+02 kg]				
Source [2.4453E+02 kg] (Shipment Totals)		6.3640E+03	1.7200E+02.	

SYLS0020803

Note 1: Container Description Codes. For containers/ waste requiring disposal in approved structural over-packs the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethylene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in item 6, or additional page

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in Item 11, or additional page

NOTE 2A: Specific Waste Descriptions (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note 3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In Item 13, Code 100=NONE REQUIRED.

Solidification

90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in Item 13, or additional page
100. None Required.

FORM 541 (04-03)

00-00-103[redacted]

New York State Department of Environmental Conservation

MEMORANDUM

TO: Jean Agostinelli, GTEOSI
FROM: Bob Stewart, NYSDEC
SUBJECT: Verification Sample Results for Cell
DATE: 9/4/03

I have enclosed the draft results for my verification samples from cell 2 for your records. The detections are within the cleanup goals.

Bob

verizon

GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E75)
Irving, Texas 75038
(972) 718-4806

July 13, 2004

Mr. Robert Stewart
Division of Environmental Remediation
New York State Department of Environmental Conservation
SUNY Campus Loop Bldg. 40
Stony Brook, New York 11790-2356

Re: *Tank Report, Cell 10, 100 Cantiague Rock Road, Hicksville, NY*

Dear Mr. Stewart:

Enclosed please find the *Tank Report, Cell 10, 100 Cantiague Rock Road, Hicksville, NY.*

If you have any questions, please call me at 214-724-2506.

Sincerely,

Jean M. Agostinelli
Vice President and Controller

cc: Jerry Riggi
Division of Solid and Hazardous Materials
Bureau of Hazardous Waste & Radiation Management
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7255

URS

July 12, 2004

Ms. Jean Agostinelli
Vice President – Controller
GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E60)
Irving, Texas 75038

Re: **Voluntary Cleanup Agreement**
For: GTE Former Sylvania Electric Products Incorporated Facility
By: GTE Operations Support Incorporated
Site #: V-00089-1 Index #: W1-0903-01-12

UST Report, Cell 10, 100 Cantiague Rock Road, Hicksville, New York

Dear Ms. Agostinelli:

This letter documents the findings and activities associated with the underground storage tank (UST) removed from Cell 10 during the soil remediation program. Cell 10 is located on the southeastern end of the 100 Building (Figure 1). Photographic documentation of the UST removal activities is provided in Appendix A.

Underground Storage Tank Removal

On March 1, 2004, during the excavation of Cell 10, an abandoned UST was encountered at approximately 5 feet below ground surface (bgs). The UST was located in subcells I20 and J20 and positioned in an east-west direction (Figure 2). The UST measured approximately 5 feet in diameter and 23 feet in length (Photograph 1). Based on the above measurements, the UST capacity was estimated at 3,400 gallons. The UST contained approximately 830 gallons of liquid and sludge. Associated electrical equipment, piping to pumps, or vent lines were not observed in the vicinity of the UST. However, the following was observed during the UST excavation activities: a 2-inch diameter metal pipe at the eastern end of the UST was removed during the UST excavation; and, a 6-inch diameter metal pipe located at the western end of the UST that was dislodged during the UST excavation activities. In addition, a 7.5-inch diameter opening was observed at the top near the western end of the UST. The UST appeared intact, with no visible punctures, signs of leakage, or product release. The above observations were documented in the field and are included in Appendix B.

URS Corporation – New York
5 Penn Plaza, 13th Floor
New York, NY 10001
Tel: 212.840.0595
Site Tel: 516.932.9157
www.urscorp.com

On March 1, 2004, one surface wipe was performed over an approximate 100-cm^2 area at the east end of the UST. Alpha/beta radiation readings were then taken on the wipe using a dual phosphor alpha/beta scintillator. Readings indicated less than minimum detectable activity (MDA). Also on March 1, 2004, surveys for gamma radiation and volatile organic compounds (VOCs) inside the UST were performed by placing the appropriate detectors through the 7.5-inch opening at the western end of the UST. The gamma radiation survey was conducted using a collimated 3-inch by 3-inch sodium iodide (3" NaI) detector. The gamma radiation screening levels measured inside the UST equaled approximately 24,000 counts per minute (cpm), which is approximately 15 microRoentgen (uR/hr), as compared to a location background of approximately 8,000 cpm (8 uR/hr). The VOC survey was conducted using a MiniRAE 2000™ photoionization detector (PID). Field readings of VOCs were 12.2 parts per million (ppm) inside the UST.

Soil Sample Collection

During the UST excavation activities from March 1 to March 10, 2004, soil samples were collected from the bottom and the sidewalls of the UST excavation for off-Site and on-Site analysis (Figure 2). The sampling procedures for both off Site and on Site are described below.

Prior to soil sampling, and based on the measured UST dimensions (23 feet in length and 5 feet in diameter), four sample points were selected along the UST north and south sidewalls (the length of the UST), and at the bottom of the UST. Two sample points were selected along the UST east and west sidewalls (the diameter of the UST). The sample points were then located (approximately one-third above the bottom of the UST for the sidewall sample locations) in the field prior to the initiation of the soil sampling activities.

Sample Collection for On-Site Analyses

Prior to soil sample collection, the predetermined sample points were screened first for VOCs utilizing a PID. One soil sample, the sample exhibiting the highest reading on the PID, was collected for on-Site analysis (samples UST A, UST B, UST C, UST D, and UST E). The above procedure was only utilized for on-Site VOC analyses. For radiological sampling procedures, a composite sampling system was utilized as described below in the paragraph "Sample Collection for Off-Site Analyses".

Sample UST B was collected on March 1, 2004, before the tank was fully exposed (Photograph 1). Sample UST C was collected on March 9, 2004 and Samples UST A, UST D, and UST E were collected on March 10, 2004, after the tank had been completely excavated.

Sample Collection for Off-Site Analyses

A total of five soil samples were collected. One composite soil sample (from the four predetermined point sample grid locations) was collected from each of the four sidewalls and from the bottom of the excavation. Chemical and radiological analyses were performed on the soil samples collected as described in the following section. The composite soil samples for VOCs for the four sidewalls were collected in this manner at the request of NYSDEC.

Soil Analysis

The soil samples were analyzed on Site for select VOCs by modified SW846 Methods 8021/8015 by Stone Environmental Laboratory, Inc. (Stone) and for radiological activity by the on-Site gamma spectroscopy system (gamma spec) via Method SOP-RAD-009 to provide real-time analytical readings. Results of the on-Site analyses are presented in Table 1 [VOCs and total petroleum hydrocarbons (TPH)] and Table 5 (gamma spectroscopy).

In addition, soil samples were analyzed off Site by Severn Trent Laboratories, Inc. (STL) in Earth City, Missouri. STL is New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified and National Environmental Laboratory Accreditation Program (NELAP) accredited both in New York and Utah. Full Contract Laboratory Program (CLP)-type data packages were requested:

- Volatile organic compounds (VOCs) via USEPA Method 8260B (Table 2);
- Semivolatile organic compounds (SVOCs) via Method 8270C, including tentatively identified compounds (TICs) (Table 3);
- Target analyte list (TAL) Metals via Method 6010B with Mercury via Method 7471A (Table 4); and
- Radionuclides:
    - Gamma spectroscopy via Method GA-01-R-Mod (Table 6); and
    - Alpha spectroscopy - Isotopic Uranium via Method 3050/RP-725 and Isotopic Thorium Method 3004/RP-725 (Table 7).

Results of the off-Site analyses are presented in Tables 2, 3, 4, 6, and 7.

Soil Analytical Results

Chemical:

Stone (on-Site) analytical results for VOCs and TPH (Table 1) indicate both trichloroethene (TCE) and TPH were not detected in the samples collected. Tetrachloroethene (PCE) was detected in two samples, UST B and UST C, at concentrations of 0.327 milligrams per kilogram (mg/kg) and 0.616 mg/kg, respectively. PCE was not detected in the remaining samples (UST A, UST D, and UST E).

STL (off-Site) analytical results for VOCs (Table 2) indicate the presence of TCE in the five soil samples, with a maximum concentration of 65 micrograms per kilogram (µg/kg or 0.065 mg/kg) in sample UST C. The remaining TCE detections are: 21 µg/kg (0.021 mg/kg) in samples UST A and UST E, 4.1 μg/kg (0.0041 mg/kg) in sample UST D, and 1.6 J μg/kg (0.0016 J mg/kg) in sample UST B. All results were well below the Site cleanup level for TCE of 700 μg/kg (0.7 mg/kg).

PCE was measured at a maximum concentration of 120 μg/kg (0.12 mg/kg) in sample UST C. The remaining PCE detections are 11 J,I μg/kg (0.011 J,I mg/kg) in sample UST B, 2 J μg/kg (0.002 J mg/kg) in sample UST A, and 1.8 J μg/kg (0.0018 J mg/kg) in sample UST E. PCE was not detected in sample UST D. All results were well below the Site cleanup level for PCE of 1,820 μg/kg (1.82 mg/kg).

STL analytical results for semivolatile organic compounds (SVOCs) indicate no detections of the standard list of compounds (Table 3). Several SVOC TICs were reported.

STL analytical results for TAL (Table 4) show detections for nickel at the following concentrations: 204 mg/kg in sample UST B, 113 mg/kg in sample UST A, 67.9 mg/kg in sample UST D, 32.2 mg/kg in sample UST C, and 16.1 mg/kg in sample UST E. All results were well below the Site cleanup level for nickel of 560 mg/kg.

Radiological:

On-Site gamma spectroscopy analysis of the UST soils (Table 5) shows concentrations of U-238 ranging from 11.4 to 81.6 picocuries per gram (pCi/g), with an average of 38.3 pCi/g; U-235 ranging from 0.672 to 3.00 pCi/g, with an average of 1.67 pCi/g; and Th-232 ranging from 0.744 to 1.26 pCi/g, with an average of 0.99 pCi/g.

Results of STL gamma spectroscopy analysis (Table 6) indicate U-238, U-235, and Th-232 in the five soil samples at the following concentration ranges: U-238 from 2.4 to 33 pCi/g, with an average concentration of 16.7 pCi/g, U-235 from 0.62 U to 1.41 pCi/g, with an average concentration of less than 0.92 pCi/g, and Th-232 from 0.28 U to 0.61 pCi/g with an average concentration of less than 0.5 pCi/g.

Results of STL alpha spectroscopy analysis show detections of uranium and thorium isotopes in the five soil samples (Table 7). Concentrations of U-238 range from 7.47 to 58.4 pCi/g, with an average value of 30.3 pCi/g; U-234 ranges from 7.56 to 60.1 pCi/g, with an average concentration of 31.5 pCi/g; and U-235 ranges from 0.63 to 3.23 pCi/g, with an average concentration of 1.74 pCi/g. The range of Th-232 concentrations is 0.53 to 1.21 pCi/g, with an average concentration of 0.90 pCi/g. Note: averages do not include the duplicate sample concentration.

UST Contents Sampling

On March 2, 2004, prior to interior contents sample collection, the top of the UST was cut open using the excavator (Photograph 2) and ventilation subsequently installed over the opening

(Photograph 3). This allowed chemical and radiological technician's safe, unrestricted access to the UST contents (Photographs 4 and 5). The contents were sampled for waste characterization purposes on March 3, 2004, after approximately two-thirds of the UST had been excavated. Samples consisted of one liquid (UST L) and one sludge (UST G).

The samples were sent to STL, where they were analyzed for:

- pH via Method 9045A (solid) and 9040 (liquid) (Table 8);
- Reactivity (sulfide and cyanide) via Methods 7.3.3 and 7.3.4, respectively (Table 8);
- Ignitability (flashpoint) via Method 1010 (Table 8);
- VOCs via USEPA Method 8260B (Table 10);
- Toxicity Characteristic Leaching Procedure (TCLP) VOCs via Methods 8260B and 1311 (Table 11);
- TCLP SVOCs via Methods 8270C and 1311 (Table 12);
- TCLP Metals via Methods 6010B and 1311, Mercury via Method 7470, and Total Beryllium via Method 6010B (Table 13);
- TCLP organochlorine pesticides via Methods 8081A and 1311 (Table 14);
- TCLP chlorinated herbicides via Methods 8151A and 1311 (Table 15); and
- Radionuclides:
    - Gamma spectroscopy via Method GA-01-R-Mod (Table 16); and
    - Alpha spectroscopy - Isotopic Uranium via Method 3050/RP-725 and Isotopic Thorium Method 3004/RP-725 (Table 17).

In addition, the sludge sample UST G was analyzed on-Site by Stone for select VOCs. The results of the on-Site analyses are presented in Table 9.

<u>*UST Contents Analytical Results*</u>

Chemical:

Stone analytical results for VOCs (Table 9) indicate TCE at 0.153 mg/kg in the UST sludge. No other VOCs were detected in the sample.

Both the liquid and sludge samples collected from the UST were highly corrosive with a pH of 12.9 and 13.6, respectively (Table 8). Because of the high corrosiveness of the samples, serious quality control issues were encountered during analysis. These issues included surrogate, matrix spike/matrix spike duplicate, and tracer recovery failures (noted on Tables 10 and 12). Thus, the STL data for VOCs (Table 10), SVOCs (Table 12), and other TCLP analyses (Table 14 and 15) are unusable. To extract certain SVOCs and surrogates from the aqueous phase, samples by procedure are acidified to pH less than 2; however, adding too much acid will cause foaming or thermo-reaction (generate heat with strong acid) potentially destroying some target analytes and surrogates. Thus, the acid fraction SVOCs and surrogates of sample UST L (pH 13.6) were essentially unrecoverable due to the inability to achieve pH 2 without adding too much acid.

Radiological:

Results of STL gamma spectroscopy analysis (Table 16) show detections of U-238 in the sludge of 31.9 pCi/g and in the liquid 15,900 pCi/g. Concentrations of Th-232 in the sludge is 1.04 pCi/g and in the liquid is 101 pCi/g.

Results of STL alpha spectroscopy analysis show detections of uranium and thorium isotopes in the samples (Table 17). The concentration of U-238 in the sludge is 18.6 pCi/g, U-234 is 19.1 pCi/g, and U-235 is 0.97 pCi/g. The concentration of U-238 in the liquid is 18,600 pCi/g, U-234 is 18,200, and U-235 is 910 pCi/g. The uranium concentration result in the liquid has a potential low bias as noted in the "w" qualifier (tracer recovery failure). The concentration of Th-232 in the sludge is 0.49 pCi/g. The concentration of Th-232 in the liquid is 144 pCi/g.

UST and Liquid Disposal

On March 9, 2004, approximately 400 gallons of liquid were pumped out of the UST and into Department of Transportation (DOT) approved 55-gallon drums awaiting off-Site disposal (Photograph 4). Liqui-Sorb® 200-gel polymer was added to the UST to solidify the remaining sludge. This sludge was mixed with on-Site soils and placed in Lift-Liners™ for off-Site disposal at Envirocare of Utah, in Clive Utah (Envirocare). On March 10, 2004, the UST carcass was fully opened, cleaned, and removed from its original location in order to allow the sampling of bed soils (Photograph 6). The cleaned UST carcass was surveyed for radioactivity. The maximum gamma radiation screening level was measured at 16,330 cpm (12 uR/hr) as compared to a location background of approximately 8,000 cpm (8 uR/hr). PID screening for VOCs on the cleaned UST carcass was not applicable and therefore was not performed. The UST carcass was subsequently sectioned into pieces, and added to the Lift-Liners™ for shipment and disposal at Envirocare.

The area in and around the former tank (subcells I20 and J20) was excavated to 15 to 24 feet bgs. This area has attained the radiological and chemical cleanup criteria. If you have any questions or require additional information, please do not hesitate to contact me. I can be reached at 516-932-9157 or 908-272-8300.

Sincerely,
URS Corporation – New York

Robert D. Brathovde, P.E.
Engineer of Record

Professional Radiation Consulting, Inc. (PRCI) has reviewed this letter and the included radiological analysis results. I am in agreement with these conclusions.

Shane Brightwell, CHP
President, PRCI

Tables:

Soil Sample Data

Table 1	Stone Environmental Incorporated – Volatile Organic Compounds and Total Petroleum Hydrocarbons
Table 2	Severn Trent Laboratory – Volatile Organic Compounds
Table 3	Severn Trent Laboratory – Semivolatile Organic Compounds
Table 4	Severn Trent Laboratory – Total Analyte List Metals
Table 5	On-Site Gamma Spectroscopy System
Table 6	Severn Trent Laboratory – Gamma Spectroscopy
Table 7	Severn Trent Laboratory – Isotopic Uranium and Thorium

UST Contents Sample Data

Table 8	Severn Trent Laboratory – General Chemistry
Table 9	Stone Environmental Incorporated – Volatile Organic Compounds
Table 10	Severn Trent Laboratory – Volatile Organic Compounds
Table 11	Severn Trent Laboratory – TCLP Volatile Organic Compounds
Table 12	Severn Trent Laboratory – TCLP Semivolatile Organic Compounds
Table 13	Severn Trent Laboratory – TCLP Metals and Total Beryllium
Table 14	Severn Trent Laboratory – TCLP Organochlorine Pesticides
Table 15	Severn Trent Laboratory – TCLP Chlorinated Herbicides
Table 16	Severn Trent Laboratory – Gamma Spectroscopy
Table 17	Severn Trent Laboratory – Isotopic Uranium and Thorium

Figures:

Figure 1	Cell and Subcell Locations
Figure 2	Cell 10 UST Sample Locations

Appendices:

Appendix A	Photographic Log
Appendix B	Field Notes

TABLES

Table 1

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Stone Environmental Incorporated
Volatile Organic Compounds and Total Petroleum Hydrocarbons

Compound	10915-C-WS-A-10I20USTA-08.5-S2			10536-C-WS-A-10J20USTB-08.5-S2			10894-C-WS-A-10J20USTC-09.0-S2			10917-C-WS-A-10I20USTD-08.5-S2			10916-C-WS-A-10J20USTE-10.5-S2		
	UST A			UST B			UST C			UST D			UST E		
	Result	Qualifier	Level IV	Result	Qualifier	Level IV	Result	Qualifier	Level IV	Result	Qualifier	Level IV	Result	Qualifier	Level IV
Vinyl Chloride	0.316	U		0.363	U		0.370	U		0.392	U		0.361	U	
trans-1,2-Dichloroethene	0.079	U		0.091	U		0.093	U		0.098	U		0.090	U	
cis-1,2-Dichloroethene	0.079	U		0.091	U		0.093	U		0.098	U		0.090	U	
Benzene	0.079	U		0.091	U		0.093	U		0.098	U		0.090	U	
Trichloroethene	0.079	U		0.091	U		0.093	U		0.098	U		0.090	U	
Toluene	0.079	U		0.091	U		0.093	U		0.098	U		0.090	U	
Tetrachloroethene	0.079	U		0.327			0.616			0.098	U		0.090	U	
Ethylbenzene	0.079	U		0.091	U		0.093	U		0.098	U		0.090	U	
m,p-Xylene	0.079	U		0.091	U		0.093	U		0.098	U		0.090	U	
o-Xylene	0.079	U		0.091	U		0.093	U		0.098	U		0.090	U	
TPH	1.579	U		1.815	U		1.850	U		1.958	U		1.807	U	

Notes:
Samples analyzed by Modified SW846 Methods 8021/8015
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in mg/kg
Level IV = Preliminary data validation
TPH = Total Petroleum Hydrocarbons
Qualifer:
U = Non-detect

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Volatile Organic Compounds

COMPOUND	10915-C-WS-A-10I20USTA-08.5-S2			10536-C-WS-A-10J20USTB-08.5-S2			10894-C-WS-A-10J20USTC-09.0-S2		
	UST A			UST B			UST C		
	Result	Qualifer	Level II	Result	Qualifer	Level II	Result	Qualifer	Level II
1,1,1-Trichloroethane	2.7	U		2.7	U		3	U	
1,1,2,2-Tetrachloroethane	2.7	U		2.7	U		3	U	
1,1,2-Trichloroethane	2.7	U		2.7	U		3	U	
1,1-Dichloroethane	2.7	U		2.7	U		3	U	
1,1-Dichloroethene	2.7	U		2.7	U		3	U	
1,2-Dichlorobenzene	21			5.4	U		20		
1,2-Dichloroethane	2.7	U		2.7	U		3	U	
1,2-Dichloropropane	2.7	U		2.7	U		3	U	
1,3-Dichlorobenzene	5.5	U		5.4	U		6	U	
1,4-Dichlorobenzene	5.5	U		5.4	U		6	U	
2-Butanone	11	U		11	U		12	U	
2-Hexanone	11	U		11	U		12	U	
4-Methyl-2-pentanone (MIBK)	11	U		11	U		12	U	
Acetone	13	B	U,z	11	U	U,z	19	B	U,z
Benzene	2.7	U		2.7	U		3	U	
Bromodichloromethane	2.7	U		2.7	U		3	U	
Bromoform	2.7	U		2.7	U		3	U	
Bromomethane	5.5	U		5.4	U		6	U	
Carbon disulfide	2.7	U		2.7	U		3	U	
Carbon tetrachloride	2.5	J	J	2.7	U		8.2		
Chlorobenzene	2.7	U		2.7	U		3	U	
Chloroethane	5.5	U		5.4	U		6	U	
Chloroform	2.7	U		2.7	U		3	U	
Chloromethane	5.5	U		5.4	U		6	U	
cis-1,2-Dichloroethene	2.7	U		2.7	U		3	U	
cis-1,3-Dichloropropene	2.7	U		2.7	U		3	U	
Dibromochloromethane	2.7	U		2.7	U		3	U	
Ethylbenzene	2.7	U		2.7	U		3	U	
Methylene chloride	2.7	U		4.8	J	J	3	U	
Styrene	2.7	U		2.7	U		3	U	
Tetrachloroethene	2.0	J	J	11		J,l	120		
Toluene	2.7	U		2.7	U		3	U	
trans-1,2-Dichloroethene	1.6	J	J	2.7	U		3.6		
trans-1,3-Dichloropropene	2.7	U		2.7	U		3	U	
Trichloroethene	21			1.6	J	J	65		
Vinyl chloride	5.5	U		5.4	U		6	U	
Xylenes (total)	2.7	U		2.7	U		3	U	

Notes:
Samples analyzed by USEPA Method 8260B
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in ug/kg
Level II = Preliminary data validation

Qualifiers:
U = Non-detect
B = Compound detected in the blank
J = Estimated Result. Results less than the reporting limit or flagged due to QC failure.
Reason Code:
z = Method blank and/or storage blank contamination
l = LCS recovery failure

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Volatile Organic Compounds

COMPOUND	10917-C-WS-A-10I20USTD-08.5-S2			10916-C-WS-A-10J20USTE-10.5-S2		
	UST D			UST E		
	Result	Qualifer	Level II	Result	Qualifer	Level II
1,1,1-Trichloroethane	2.6	U		2.6	U	
1,1,2,2-Tetrachloroethane	2.6	U		2.6	U	
1,1,2-Trichloroethane	2.6	U		2.6	U	
1,1-Dichloroethane	2.6	U		2.6	U	
1,1-Dichloroethene	2.6	U		2.6	U	
1,2-Dichlorobenzene	3.9	J	J	15		
1,2-Dichloroethane	2.6	U		2.6	U	
1,2-Dichloropropane	2.6	U		2.6	U	
1,3-Dichlorobenzene	5.2	U		5.2	U	
1,4-Dichlorobenzene	5.2	U		5.2	U	
2-Butanone	10	U		10	U	
2-Hexanone	10	U		10	U	
4-Methyl-2-pentanone (MIBK)	10	U		10	U	
Acetone	15	B	U,z	12	B	U,z
Benzene	2.6	U		2.6	U	
Bromodichloromethane	2.6	U		2.6	U	
Bromoform	2.6	U		2.6	U	
Bromomethane	5.2	U		5.2	U	
Carbon disulfide	2.6	U		2.6	U	
Carbon tetrachloride	0.86	J	J	2.4	J	J
Chlorobenzene	2.6	U		2.6	U	
Chloroethane	5.2	U		5.2	U	
Chloroform	2.6	U		2.6	U	
Chloromethane	5.2	U		5.2	U	
cis-1,2-Dichloroethene	2.6	U		0.36	J	J
cis-1,3-Dichloropropene	2.6	U		2.6	U	
Dibromochloromethane	2.6	U		2.6	U	
Ethylbenzene	2.6	U		2.6	U	
Methylene chloride	2.6	U		2.6	U	
Styrene	2.6	U		2.6	U	
Tetrachloroethene	2.6	U		1.8	J	J
Toluene	2.6	U		2.6	U	
trans-1,2-Dichloroethene	2.6	U		1.3	J	J
trans-1,3-Dichloropropene	2.6	U		2.6	U	
Trichloroethene	4.1			21		
Vinyl chloride	5.2	U		5.2	U	
Xylenes (total)	2.6	U		2.6	U	

Notes:
Samples analyzed by USEPA Method 8260B
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in ug/kg
Level II = Preliminary data validation

Qualifiers:
U = Non-detect
B = Compound detected in the blank
J = Estimated Result. Results less than the reporting limit or flagged due to QC failure.
Reason Code:
z = method blank and/or storage blank contamination
l = laboratory control standard recovery failure

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Semivolatile Organic Compounds

Compound	10915-S-WS-A-10I20USTA-08.5-S2			10536-S-WS-A-10J20USTB-08.5-S2			10894-S-WS-A-10J20USTC-09.0-S2		
	UST A			UST B			UST C		
	Result	Qualifer	Level II	Result	Qualifer	Level II	Result	Qualifer	Level II
1,2,4-Trichlorobenzene	360	U		360	U		400	U	
1,2-Dichlorobenzene	360	U		360	U		400	U	
1,3-Dichlorobenzene	360	U		360	U		400	U	
1,4-Dichlorobenzene	360	U		360	U		400	U	
2,2'-oxybis(1-Chloropropane)	360	U		360	U		400	U	
2,4,5-Trichlorophenol	360	U		360	U		400	U	
2,4,6-Trichlorophenol	360	U		360	U		400	U	
2,4-Dichlorophenol	360	U		360	U		400	U	
2,4-Dimethylphenol	360	U		360	U		400	U	
2,4-Dinitrophenol	1700	U		1700	U		1900	U	
2,4-Dinitrotoluene	360	U		360	U		400	U	
2,6-Dinitrotoluene	360	U		360	U		400	U	
2-Chloronaphthalene	360	U		360	U		400	U	
2-Chlorophenol	360	U		360	U		400	U	
2-Methylnaphthalene	360	U		360	U		400	U	
2-Methylphenol	360	U		360	U		400	U	
2-Nitroaniline	1700	U		1700	U		1900	U	
2-Nitrophenol	360	U		360	U		400	U	
3,3'-Dichlorobenzidine	1700	U		1700	U		1900	U	
3-Nitroaniline	1700	U		1700	U		1900	U	
4,6-Dinitro-2-methylphenol	1700	U		1700	U		1900	U	
4-Bromophenyl phenyl ether	360	U		360	U		400	U	
4-Chloro-3-methylphenol	360	U		360	U		400	U	
4-Chloroaniline	360	U		360	U		400	U	
4-Chlorophenyl phenyl ether	360	U		360	U		400	U	
4-Methylphenol	720	U		720	U		790	U	
4-Nitroaniline	1700	U		1700	U		1900	U	
4-Nitrophenol	1700	U		1700	U		1900	U	
Acenaphthene	360	U		360	U		400	U	
Acenaphthylene	360	U		360	U		400	U	
Anthracene	360	U		360	U		400	U	
Benzo(a)anthracene	360	U		360	U		400	U	
Benzo(a)pyrene	360	U		360	U		400	U	
Benzo(b)fluoranthene	360	U		360	U		400	U	
Benzo(ghi)perylene	360	U		360	U		400	U	
Benzo(k)fluoranthene	360	U		360	U		400	U	

Notes:
Samples analyzed by USEPA Method 8270C
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in ug/kg
Level II = Preliminary data validation

Qualifers:
U = Non-detect
R = The datum is unusable due to serious quality control failures
NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the numerical value represents an approximate concentration.

Reason Code:
t = Tentatively Identified Compound (TIC)
w = TIC common laboratory contaminant

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Semivolatile Organic Compounds

Compound	10915-S-WS-A-10I20USTA-08.5-S2			10536-S-WS-A-10J20USTB-08.5-S2			10894-S-WS-A-10J20USTC-09.0-S2		
	UST A			UST B			UST C		
	Result	Qualifer	Level II	Result	Qualifer	Level II	Result	Qualifer	Level II
bis(2-Chloroethoxy)methane	360	U		360	U		400	U	
bis(2-Chloroethyl) ether	360	U		360	U		400	U	
bis(2-Ethylhexyl) phthalate	360	U		360	U		400	U	
Butyl benzyl phthalate	360	U		360	U		400	U	
Carbazole	360	U		360	U		400	U	
Chrysene	360	U		360	U		400	U	
Di-n-butyl phthalate	360	U		360	U		400	U	
Di-n-octyl phthalate	360	U		360	U		400	U	
Dibenzo(a,h)anthracene	360	U		360	U		400	U	
Dibenzofuran	360	U		360	U		400	U	
Diethyl phthalate	360	U		360	U		400	U	
Dimethyl phthalate	360	U		360	U		400	U	
Fluoranthene	360	U		360	U		400	U	
Fluorene	360	U		360	U		400	U	
Hexachlorobenzene	360	U		360	U		400	U	
Hexachlorobutadiene	360	U		360	U		400	U	
Hexachlorocyclopentadiene	1700	U		1700	U		1900	U	
Hexachloroethane	360	U		360	U		400	U	
Indeno(1,2,3-cd)pyrene	360	U		360	U		400	U	
Isophorone	360	U		360	U		400	U	
N-Nitrosodi-n-propylamine	360	U		360	U		400	U	
N-Nitrosodiphenylamine	360	U		360	U		400	U	
Naphthalene	360	U		360	U		400	U	
Nitrobenzene	360	U		360	U		400	U	
Pentachlorophenol	1700	U		1700	U		1900	U	
Phenanthrene	360	U		360	U		400	U	
Phenol	360	U		360	U		400	U	
Pyrene	360	U		360	U		400	U	
TIC-Unknown aldol condensate	12000		R,w	14000		R,w	13000		R,w
TIC-Methylene chloride	660		R,w						
TIC-Unknown alkane	150		NJ,t						
TIC-Unknown	330		NJ,t				580		NJ,t
TIC-Unknown	160		NJ,t				2000		NJ,t
TIC-Unknown	1700		NJ,t				370		NJ,t
TIC-Unknown	1400		NJ,t						
TIC-Unknown	690		NJ,t						

Notes:
Samples analyzed by USEPA Method 8270C
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in ug/kg
Level II = Preliminary data validation

Qualifers:
U = Non-detect
R = The datum is unusable due to serious quality control failures
NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the numerical value represents an approximate concentration.

Reason Code:
t = Tentatively Identified Compound (TIC)
w = TIC common laboratory contaminant

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Semivolatile Organic Compounds

Compound	10917-S-WS-A-10I20USTD-08.5-S2			10916-S-WS-A-10J20USTE-10.5-S2		
	UST D			UST E		
	Result	Qualifer	Level II	Result	Qualifer	Level II
1,2,4-Trichlorobenzene	340	U		340	U	
1,2-Dichlorobenzene	340	U		340	U	
1,3-Dichlorobenzene	340	U		340	U	
1,4-Dichlorobenzene	340	U		340	U	
2,2'-oxybis(1-Chloropropane)	340	U		340	U	
2,4,5-Trichlorophenol	340	U		340	U	
2,4,6-Trichlorophenol	340	U		340	U	
2,4-Dichlorophenol	340	U		340	U	
2,4-Dimethylphenol	340	U		340	U	
2,4-Dinitrophenol	1700	U		1700	U	
2,4-Dinitrotoluene	340	U		340	U	
2,6-Dinitrotoluene	340	U		340	U	
2-Chloronaphthalene	340	U		340	U	
2-Chlorophenol	340	U		340	U	
2-Methylnaphthalene	340	U		340	U	
2-Methylphenol	340	U		340	U	
2-Nitroaniline	1700	U		1700	U	
2-Nitrophenol	340	U		340	U	
3,3'-Dichlorobenzidine	1700	U		1700	U	
3-Nitroaniline	1700	U		1700	U	
4,6-Dinitro-2-methylphenol	1700	U		1700	U	
4-Bromophenyl phenyl ether	340	U		340	U	
4-Chloro-3-methylphenol	340	U		340	U	
4-Chloroaniline	340	U		340	U	
4-Chlorophenyl phenyl ether	340	U		340	U	
4-Methylphenol	680	U		690	U	
4-Nitroaniline	1700	U		1700	U	
4-Nitrophenol	1700	U		1700	U	
Acenaphthene	340	U		340	U	
Acenaphthylene	340	U		340	U	
Anthracene	340	U		340	U	
Benzo(a)anthracene	340	U		340	U	
Benzo(a)pyrene	340	U		340	U	
Benzo(b)fluoranthene	340	U		340	U	
Benzo(ghi)perylene	340	U		340	U	
Benzo(k)fluoranthene	340	U		340	U	

Notes:
Samples analyzed by USEPA Method 8270C
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in ug/kg
Level II = Preliminary data validation

Qualifers:
U = Non-detect
R = The datum is unusable due to serious quality control failures
NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the numerical value represents an approximate concentration.

Reason Code:
t = Tentatively Identified Compound (TIC)
w = TIC common laboratory contaminant

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Semivolatile Organic Compounds

Compound	10917-S-WS-A-10I20USTD-08.5-S2			10916-S-WS-A-10J20USTE-10.5-S2		
	UST D			UST E		
	Result	Qualifer	Level II	Result	Qualifer	Level II
bis(2-Chloroethoxy)methane	340	U		340	U	
bis(2-Chloroethyl) ether	340	U		340	U	
bis(2-Ethylhexyl) phthalate	340	U		340	U	
Butyl benzyl phthalate	340	U		340	U	
Carbazole	340	U		340	U	
Chrysene	340	U		340	U	
Di-n-butyl phthalate	340	U		340	U	
Di-n-octyl phthalate	340	U		340	U	
Dibenzo(a,h)anthracene	340	U		340	U	
Dibenzofuran	340	U		340	U	
Diethyl phthalate	340	U		340	U	
Dimethyl phthalate	340	U		340	U	
Fluoranthene	340	U		340	U	
Fluorene	340	U		340	U	
Hexachlorobenzene	340	U		340	U	
Hexachlorobutadiene	340	U		340	U	
Hexachlorocyclopentadiene	1700	U		1700	U	
Hexachloroethane	340	U		340	U	
Indeno(1,2,3-cd)pyrene	340	U		340	U	
Isophorone	340	U		340	U	
N-Nitrosodi-n-propylamine	340	U		340	U	
N-Nitrosodiphenylamine	340	U		340	U	
Naphthalene	340	U		340	U	
Nitrobenzene	340	U		340	U	
Pentachlorophenol	1700	U		1700	U	
Phenanthrene	340	U		340	U	
Phenol	340	U		340	U	
Pyrene	340	U		340	U	
TIC-Unknown aldol condensate	13000		R,w	12000		R,w
TIC-Methylene chloride	510		R,w	560		R,w
TIC-Unknown alkane	250		NJ,t			
TIC-Unknown	1700		NJ,t	220		NJ,t
TIC-Unknown				230		NJ,t
TIC-Unknown				1700		NJ,t
TIC-Unknown						
TIC-Unknown						

Notes:
Samples analyzed by USEPA Method 8270C
Samples collected on 3/1/04 (UST B),
3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in ug/kg
Level II = Preliminary data validation

Qualifers:
U = Non-detect
R = The datum is unusable due to serious quality control failures
NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the numerical value represents an approximate concentration.
Reason Code:
t = Tentatively Identified Compound (TIC)
w = TIC common laboratory contaminant

Table 4

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Target Analyte List Metals

Compound	10915-M-WS-A-10I20USTA-08.5-S2			10536-M-WS-A-10J20USTB-08.5-S2			10894-M-WS-A-10J20USTC-09.0-S2		
	UST A			UST B			UST C		
	Result	Qualifier	Level II	Result	Qualifier	Level II	Result	Qualifier	Level II
Aluminum	6370	N		6550	N		11300	N	
Antimony	0.24	B,N	J	0.65	B,N	J	1.1	B,N	J
Arsenic	3.6			2.2			2.6		
Barium	23.5			21.6	B	J	36		
Beryllium	0.33	B	J	0.3	B	J	0.49	B	J
Cadmium	0.24	B	J	0.54	U		0.6	U	
Calcium	1840	N		995	N*		509	B,N	J
Chromium	8.7	N		8.3			13.1	N	
Cobalt	2.8	B	J	4.2	B	J	7.7		
Copper	16.8			13.5	N		12.1		
Iron	9100	N		7470	N		10700	N	
Lead	16.9			10.8	N		10.3		
Magnesium	830			761			1710		
Manganese	159	N		215	N		251	N	
Nickel	113			204			32.2		
Potassium	308	B	J	200	B	J	599	B	J
Selenium	0.36	B	J	0.31	B	J	0.66		
Silver	0.19	B	J	0.27	B	J	1.2	U	
Sodium	162	B	J	396	B	J	225	B	J
Thallium	0.93	B	J	1	B	J	0.73	B	J
Vanadium	11.8			10.2			17.2		
Zinc	44.6	J		22.8	N		35	J	
Mercury	0.13			0.06			0.059		

Notes:
Samples analyzed by USEPA Methods 6010B and 7471A (Mercury only)
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in mg/kg
Level II = Preliminary data validation

Qualifers:
U = Non-detect
J = Estimated Result. Result less than Reporting Limit (RL)
N = Spiked analyte recovery is outside stated control limits.
B = Estimated result. Result is less than the reporting limit and greater than the method detection limit.
*Lab duplicate or MS/MSD relative percent difference out

Table 4

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Target Analyte List Metals

Compound	10917-M-WS-A-10I20USTD-08.5-S2			10916-M-WS-A-10J20USTE-10.5-S2		
	UST D			UST E		
	Result	Qualifier	Level II	Result	Qualifier	Level II
Aluminum	2760	N		1330	N	
Antimony	1	U,N		1	U	
Arsenic	1.2			1.0	B	J
Barium	11.3	B	J	4.6	B	J
Beryllium	0.24	B	J	0.19	B	J
Cadmium	0.52	U		0.52	U	
Calcium	152	B,N	J	210	B,N	J
Chromium	8.3	N		1.8	N	
Cobalt	1.2	B	J	2.1	B	J
Copper	5.6			2.6		
Iron	8490	N		4140	N	
Lead	43.2			5.5		
Magnesium	339	B	J	168	B	J
Manganese	83.5	N		77.1	N	
Nickel	67.9			16.1		
Potassium	162	B	J	521	U	
Selenium	0.48	B	J	0.52	U	
Silver	1.0	U		1.0	U	
Sodium	168	B	J	26.6	B	J
Thallium	0.61	B	J	0.61	B	J
Vanadium	3.5	B	J	3.1	B	J
Zinc	14.3	J		14.4	J	
Mercury	0.034	U		0.025	B	J

Notes:
Samples analyzed by USEPA Methods 6010B and 7471A (Mercury only)
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in mg/kg
Level II = Preliminary data validation

Qualifers:
U = Non-detect
J = Estimated Result. Result less than Reporting Limit (RL)
N = Spiked analyte recovery is outside stated control limits.
B = Estimated result. Result is less than the reporting limit and greater than the method detection limit.

Table 5

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
On-Site Gamma Spectrometry System

Sample ID/Location	Analysis Date	Radionuclide	Corrected Activity	2-Sigma Uncertainty	MDA	Level III
10915-R-WS-A-10I20USTA-08.5-S1 UST A	3/10/2004	Th-232	1.26	0.164	0.0137	
		U-238	26.1	3.17	6.28	J,k
		U-235	1.65	0.349	0.127	
10536-R-WS-A-10J20USTB-08.5-S1 UST B	3/1/2004	Th-232	1.07	0.177	0.0257	
		U-238	81.60	16.41	8.22	
		U-235	3.00	0.448	0.164	
10894-R-WS-A-10J20USTC-09.0-S1 UST C	3/9/2004	Th-232	0.744	0.0944	0.0072	
		U-238	56.2	10.75	5.16	
		U-235	1.92	0.290	0.104	
10917-R-WS-A-10I20USTD-08.5-S1 UST D	3/10/2004	Th-232	0.834	0.121	0.0117	
		U-238	16.4	3.34	5.92	
		U-235	1.11	0.253	0.120	
10916-R-WS-A-10J20USTE-10.5-S1 UST E	3/10/2004	Th-232	1.05	0.118	0.0174	
		U-238	11.4	2.11	3.61	
		U-235	0.672	0.147	0.0824	

Notes:
All data are reported in picoCuries per gram (pCi/g)
MDA - Minimum detectable activity.
Level III = Preliminary data validation
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)

Qualifiers:
J = Estimated value
Reason Code:
k = Laboratory duplicate imprecision

Table 6

GTE Operations Support Incorporated
Former Sylvaina Electic Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Gamma Spectroscopy

Compound	10915-R-WS-A-10I20USTA-08.5-S2				10536-R-WS-A-10J20USTB-08.5-S2				10894-R-WS-A-10J20USTC-09.0-S2			
	UST A				UST B				UST C			
	Result	Qual.	Uncertainty	Level II	Result	Qual.	Uncertainty	Level II	Result	Qual.	Uncertainty	Level II
Actinium 228	0.67		0.30		0.70		0.27		0.58		0.30	
Bismuth 212	0.69	U	0.35	U,Q1	0.75	U	0.35	U,Q1	0.57	U	0.29	U,Q1
Bismuth 214	0.266		0.10		0.25		0.13		0.29		0.13	
Lead 212	0.64		0.12		0.60		0.13		0.45		0.11	
Lead 214	0.239		0.097		0.28		0.12		0.44		0.12	
Protactinium 234M	20.0		7.3		34		12		23.3		9.2	
Radium (226)	0.31		0.16		0.29	U	0.15	U,Q1	0.39		0.20	
Radium 228	0.59		0.3		0.65		0.32		0.31	U	0.24	U,Q1
Thallium 208	0.218		0.065		0.22		0.073		0.185		0.073	
Thorium 232	0.61		0.18		0.61		0.2		0.52		0.20	
Thorium 234	16		2.1		27.2		3.2		21.6		2.7	
Uranium 235	0.76	U	0.32	U,Q1	1.41		0.81		1.1		0.62	
Uranium 238	15.2		2.6		33.0		4.70		22.8		3.7	
Potassium 40	6		1.3		8.2		1.60		6.3		1.4	

Notes:
Samples analyzed by Method GA-01-R-Mod
Results reported in picoCuries per gram (pCi/g)
Level II - Prelimininary data validation
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)

Qualifiers:
U = Non-detect
Reason Code:
Q1 = Reporting limit less than minimum detectable concentration (95% confidence of non-detection).

Table 6

GTE Operations Support Incorporated
Former Sylvaina Electic Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Gamma Spectroscopy

Compound	10917-R-WS-A-10I20USTD-08.5-S2				10916-R-WS-A-10J20USTE-10.5-S2			
	UST D				UST E			
	Result	Qual.	Uncertainty	Level II	Result	Qual.	Uncertainty	Level II
Actinium 228	0.52		0.24		0.51		0.24	
Bismuth 212	0.61	U	0.28	U,Q1	0.48	U	0.25	U,Q1
Bismuth 214	0.25		0.12		0.19	U	0.10	U,Q1
Lead 212	0.41		0.10		0.21		0.11	
Lead 214	0.239		0.095		0.130		0.087	
Protactinium 234M	16.1		6		11	U	4.9	U,Q1
Radium (226)	0.25	U	0.13	U,Q1	0.23	U	0.11	U,Q1
Radium 228	0.39	U	0.20	U,Q1	0.43	U	0.19	U,Q1
Thallium 208	0.173		0.061		0.10	U	0.048	U,Q1
Thorium 232	0.48		0.17		0.28	U	0.13	U,Q1
Thorium 234	9.80		1.5		2.94		0.69	
Uranium 235	0.69		0.50		0.62	U	0.33	U,Q1
Uranium 238	9.9		1.8		2.4		1.3	
Potassium 40	7.1		1.4		4.5		1.2	

Notes:
Samples analyzed by Method GA-01-R-Mod
Results reported in picoCuries per gram (pCi/g)
Level II - Prelimininary data validation
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)

Qualifiers:
U = Non-detect
Reason Code:
Q1 = Reporting limit less than minimum detectable concentration (95% confidence of non-detection).

Table 7

GTE Operations Support Incorporated
Former Sylvaina Electic Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Isotopic Thorium and Uranium

Compound	10915-R-WS-A-10I20USTA-08.5-S2				10536-R-WS-A-10J20USTB-08.5-S2				10536-R-WS-A-10J20USTB-08.5-S2-DP			
	UST A				UST B				UST B			
	Result	Qual.	Uncertainty	Level II	Result	Qual.	Uncertainty	Level II	Result	Qual.	Uncertainty	Level II
Uranium 234	29.3		2.1		60.1		3.8		59		3.6	
Uranium 235	1.48		0.37		3.23		0.61		2.97		0.55	
Uranium 238	28.6		2.1		58.4		3.7		56.8		3.4	
Thorium 228	0.92		0.33		0.90		0.34		0.60		0.30	
Thorium 230	0.82		0.31	J,p	0.98		0.35	J,p	1.43		0.47	J,p
Thorium 232	1.21		0.39		0.97		0.35		0.80		0.34	

Notes:
Isotopic thorium analyzed by Method 3004/RP-725
Isotopic uranium analyzed by Method 3050/RP-725
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in picoCuries per gram (pCi/g)
Level II = Preliminary data validation
Qualifiers:
J = Estimated Result. Result were flagged due to QC failure.
Reason Code:
p = Preparation blank contamination

Table 7

GTE Operations Support Incorporated
Former Sylvaina Electic Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Soils
Severn Trent Laboratory
Isotopic Thorium and Uranium

Compound	10894-R-WS-A-10J20USTC-09.0-S2				10917-R-WS-A-10I20USTD-08.5-S2				10916-R-WS-A-10J20USTE-10.5-S2			
	UST C				UST D				UST E			
	Result	Qual.	Uncertainty	Level II	Result	Qual.	Uncertainty	Level II	Result	Qual.	Uncertainty	Level II
Uranium 234	41.7		2.7		18.7		1.7		7.56		0.81	
Uranium 235	2.26		0.48		1.12		0.37		0.63		0.24	
Uranium 238	39.7		2.6		17.1		1.6		7.47		0.81	
Thorium 228	0.86		0.32		0.79		0.33		0.56		0.31	
Thorium 230	1.19		0.39	J,p	0.84		0.33	J,p	0.94		0.38	J,p
Thorium 232	0.77		0.29		1.02		0.36		0.53		0.28	

Notes:
Isotopic thorium analyzed by Method 3004/RP-725
Isotopic uranium analyzed by Method 3050/RP-725
Samples collected on 3/1/04 (UST B), 3/9/04 (UST C), and 3/10/04 (UST A, D, E)
Results reported in pCi/g
Level II = Preliminary data validation
Qualifiers:
J = Estimated Result. Result were flagged due to QC failure.
Reason Code:
p = Preparation blank contamination

Table 8

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10
Severn Trent Laboratory
General Chemistry

Analyte	Units	Method	10648-C-EX-G-10I20USTG-99.9-S2 UST G				Units	10647-C-EX-W-10I20USTL-99.9-S2 UST L			
			Matrix	Result	Qualifer	Level II		Matrix	Result	Qualifer	Level II
Flashpoint	deg C	SW846-1010	sludge	>60.0			deg C	liquid	>60.0		
pH	no units	SW846 9045A	sludge	12.9			no units	liquid	13.6		
Reactive Cyanide	mg/kg	SW846-7.3.3	sludge	0.085	U		mg/l	liquid	0.25	U	UJ,I
Reactive Sulfide	mg/kg	SW846-7.3.4	sludge	7.6	U		mg/l	liquid	22.2	U	

Notes:
Samples collected on 3/3/04
Level II = Preliminary data validation
Qualifier:
U = Non-detect
UJ = The datum should be considered a non-detect; however, the detection limit may be inaccurate.
Reason Code:
I = laboratory control standard recovery failure

Table 9

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Sludge
Stone Environmental Incorporated
Volatile Organic Compounds

Compound	10648-R-EX-G-10I20USTG-99.9-S3		
	UST G		
	Result	Qualifier	Level IV
Vinyl Chloride	0.447	U	
trans-1,2-Dichloroethene	0.112	U	
cis-1,2-Dichloroethene	0.112	U	
Benzene	0.112	U	
Trichloroethene	0.153		
Toluene	0.112	U	
Tetrachloroethene	0.112	U	
Ethylbenzene	0.112	U	
m,p-Xylene	0.112	U	
o-Xylene	0.112	U	
Total Petroleum Hydrocarbon (TPH)	2.233	U	

Notes:
Samples analyzed by Modified SW846 Methods 8021/8015
Samples collected on 3/3/04
Results reported in mg/kg
Level IV = Preliminary data validation
Qualifer:
U = Non-detect

Table 10

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Liquid
Severn Trent Laboratory
Volatile Organic Compounds

Compound Name	10647-C-EX-W-10I20USTL-99.9-S2		
	UST L		
	Result	Qualifier	Level II
1,1,1-Trichloroethane	1	U	R,s
1,1,2,2-Tetrachloroethane	1	U	R,s
1,1,2-Trichloroethane	1	U	R,s
1,1-Dichloroethane	1	U	R,s
1,1-Dichloroethene	1	U	R,s
1,2-Dichlorobenzene	1	U	R,s
1,2-Dichloroethane	1	U	R,s
1,2-Dichloropropane	1	U	R,s
1,3-Dichlorobenzene	1	U	R,s
1,4-Dichlorobenzene	1	U	R,s
2-Butanone	14	J	J,s
2-Hexanone	0.77	J	J,s
4-Methyl-2-pentanone (MIBK)	5	U	R,s
Acetone	120	B,E	J,s
Benzene	1	U	R,s
Bromodichloromethane	1	U	R,s
Bromoform	1	U	R,s
Bromomethane	2	U	R,s

Notes:
Samples analyzed by USEPA Method 8260B
Sample collected on 3/3/04
Results reported in ug/L
Level II = Preliminary data validation

Qualifier:
J = Estimated Result. Result is less than the Reporting Limit (RL)
R = The datum is unusable due to QC failures.
U = Non-detect
B = Compound detected in the blank
E = Exceed linear range
Reason Code:
s = Surrogate failure.

Table 10

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10 Liquid
Severn Trent Laboratory
Volatile Organic Compounds

Compound Name	10647-C-EX-W-10I20USTL-99.9-S2		
	UST L		
	Result	Qualifier	Level II
Carbon disulfide	1	U	R,s
Carbon tetrachloride	1	U	R,s
Chlorobenzene	1	U	R,s
Chloroethane	2	U	R,s
Chloroform	1	U	R,s
Chloromethane	2	U	R,s
cis-1,2-Dichloroethene	0.13		J,s
cis-1,3-Dichloropropene	1	U	R,S
Dibromochloromethane	1	U	R,s
Ethylbenzene	1	U	R,s
Methylene chloride	1	U	R,s
Styrene	1	U	R,s
Tetrachloroethene	4.8		J,s
Toluene	1	U	R,s
trans-1,2-Dichloroethene	1	U	R,s
trans-1,3-Dichloropropene	1	U	R,s
Trichloroethene	1.1		J,s
Vinyl chloride	1	U	R,s
Xylenes (total)	1	U	R,s

Notes:
Samples analyzed by USEPA Method 8260B
Sample collected on 3/3/04
Results reported in ug/L
Level II = Preliminary data validation

Qualifier:
J = Estimated Result. Result is less than the Reporting Limit (RL)
R = The datum is unusable due to QC failures.
U = Non-detect
Reason Code:
s = Surrogate failure.

Table 11

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility
Hicksville, New York

Tank Cell 10 Sludge
Severn Trent Laboratory
Toxicity Characteristic Leaching Procedure
Volatile Organic Compounds

Compound	10648-C-EX-G-10I20USTG-99.9-S2		
	UST G		
	Result	Qualifier	Level II
Vinyl chloride	1000	U	
1,1-Dichloroethene	500	U	
2-Butanone	500	U	
Chloroform	500	U	
Carbon tetrachloride	500	U	
1,2-Dichloroethane	500	U	
Benzene	500	U	
Trichloroethene	500	U	
Tetrachloroethene	500	U	
Chlorobenzene	500	U	

Notes:
Samples analyzed by USEPA Methods 8260B and 1311
Sample collected on 3/3/04
Results reported in ug/L
Level II = Preliminary data validation
Qualifier:
U = Non-detect

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility
Hicksville, New York

Tank Cell 10
Severn Trent Laboratory
Toxicity Characteristic Leaching Procedure - Semivolatile Organic Compounds

	10648-C-EX-G-10I20USTG-99.9-S2				10647-C-EX-W-10I20USTL-99.9-S2			
	UST G				UST L			
Compound Name	**Matrix**	**Result**	**Qualifer**	**Level II**	**Matrix**	**Result**	**Qualifer**	**Level II ***
1,4-Dichlorobenzene	sludge	50	U		liquid	100000	U	
2,4,5-Trichlorophenol	sludge	50	U		liquid	100000	U	R,s
2,4,6-Trichlorophenol	sludge	50	U		liquid	100000	U	R,s
2,4-Dinitrotoluene	sludge	50	U		liquid	100000	U	
2-Methylphenol	sludge	50	U		liquid	100000	U	R,s
3-Methylphenol & 4-Methylphenol	sludge	100	U		liquid	200000	U	R,s
Hexachlorobenzene	sludge	50	U		liquid	100000	U	
Hexachlorobutadiene	sludge	50	U		liquid	100000	U	
Hexachloroethane	sludge	50	U		liquid	100000	U	
Nitrobenzene	sludge	50	U		liquid	100000	U	
Pentachlorophenol	sludge	250	U		liquid	100000	U	R,s
Pyridine	sludge	100	U		liquid	200000	U	
TIC-Triphenylphosphine oxide	sludge	92		NJ,t	liquid	150000		NJ,t
TIC-Dihydrocodeine bitartrate	sludge	26		NJ,t	liquid			
TIC-Hydrocodone	sludge	31		NJ,t	liquid			

Notes:
Samples analyzed by USEPA Methods 8270C and 1311
Samples collected on 3/3/04
Results reported in ug/L
Level II - Preliminary data validation
* To extract certain SVOCs and surrogates from the aqueous phase, samples by procedure are acidified to pH less than 2; however, adding too much acid will cause foaming or thermo-reaction (generate heat with strong acid). Thus, the acid fraction SVOCs and surrogates of sample UST L (pH 13.6) were essentially unrecoverable due to the inability to achieve pH 2 without adding too much acid.
Qualifier:
U = Non-detect
R = The datum is unusable due to serious quality control failures.
NJ = The analysis indicates the presence of an analyte that has been tentatively identified and the numerical value represents an approximate concentration.
Reason Code:
s = Surrogate failure.
t = Tentatively Identified Compound (TIC)

Table 13

GTE Operations Support Incorporated
Former Sylavina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10
Severn Trent Laboratory
Toxicity Characteristic Leaching Procedure - Metals and Total Beryllium

Compound Name	10648-C-EX-G-10I20USTG-99.9-S2				10647-C-EX-W-10I20USTL-99.9-S2			
	UST G				UST L			
	Matrix	Result	Qualifer	Level II	Matrix	Result	Qualifer	Level II
Arsenic	sludge	500	U		liquid	500	U	
Barium	sludge	4.1	B	J	liquid	500	U	
Cadmium	sludge	25	U		liquid	15.8	B	J
Chromium	sludge	50	U		liquid	50	U	
Copper	sludge	125	U		liquid	90.1	B	J
Lead	sludge	250	U		liquid	250	U	
Selenium	sludge	500	U		liquid	313	B	J
Silver	sludge	50	U		liquid	50	U	
Zinc	sludge	45	B	J	liquid	142	B	J
Mercury	sludge	0.62	B	J	liquid	10	U	
Beryllium	sludge	150	B	J	liquid	44.2	U	

Notes :

Samples analyzed by USEPA Methods 6010B and 1311 and 7471A (Mercury)

TCLP results reported in ug/l

Beryllium results reported in ug/l (liquid) and ug/kg (sludge)

Samples collected on 3/3/04

Level II - Preliminary data validation

Qualifier:

U = Non-detect

J = Estimated Result. Result less than Reporting Limit

B = Estimated result. Result is less than the reporting limit but greater than the detection limit.

Table 14

GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10
Severn Trent Laboratory
Toxicity Characteristic Leaching Procedure - Organochlorine Pesticides

Compound Name	10648-C-EX-G-10I20USTG-99.9-S2				10647-C-EX-W-10I20USTL-99.9-S2			
	UST G				UST L			
	Matrix	Result	Qualifer	Level II	Matrix	Result	Qualifer	Level II
Chlordane (technical)	sludge	5	U		liquid	500	U	
Endrin	sludge	0.5	U		liquid	50	U	
gamma-BHC (Lindane)	sludge	0.5	U		liquid	50	U	R,m
Heptachlor	sludge	0.5	U		liquid	50	U	
Heptachlor epoxide	sludge	0.5	U		liquid	50	U	
Methoxychlor	sludge	6.4		J,m	liquid	100	U	
Toxaphene	sludge	20	U		liquid	2000	U	

Notes:
Samples analyzed by USEPA Method 8081A and 1311
Samples collected on 3/3/04
Results reported in ug/L
Level II = Preliminary data validation
Qualifier:
U = Non-detect
J = Estimated Result. Result less than Reporting Limit
R = The datum is unusable due to serious quality control failures.
Reason Code:
m = MS/MSD recovery failure

Table 15

GTE Operations Support Incorporated
Former Sylvaina Electric Products Incorporated Facility - Hicksville, New York

Tank Cell 10
Severn Trent Laboratory
Toxicity Characteristic Leaching Procedure - Chlorinated Herbicides

Compound Name	10648-C-EX-G-10I20USTG-99.9-S2				10647-C-EX-W-10I20USTL-99.9-S2			
	UST G				UST L			
	Matrix	Result	Qualifer	Level II	Matrix	Result	Qualifer	Level II
2,4,5-TP (Silvex)	sludge	10	U		liquid	1000	U	UJ,s
2,4-D	sludge	40	U		liquid	4000	U	R,m

Notes:
Samples analyzed by USEPA Method 8151A and 1311
Samples collected on 3/3/04
Results reported in ug/L
Level II = Preliminary data validation
Qualifier:
U = Non-detect
UJ = The datum should be considered a non-detect; however, the detection limit may be inaccurate.
R = The datum is unusable due to serious quality control failures.
Reason Code:
s = Surrogate failure
m = MS/MSD recovery failure

Table 16

GTE Operations Support Incorporated
Former Sylvaina Electic Products Incorporated Facility - Hicksville, New York

Tank Cell 10
Severn Trent Laboratory
Gamma Spectroscopy

Compound	10648-R-EX-G-10I20USTG-99.9-S2 UST G					10647-R-EX-W-10I20USTL-99.9-S2 UST L				
	Matrix	Result	Qualifier	Uncertainty	Level II	Matrix	Result	Qualifier	Uncertainty	Level II
Actinium 228	sludge	1.66		0.54		liquid	64	U	29	U,Q1
Bismuth 212	sludge	0.8	U	0.39	U,Q1	liquid	130	U	70	U,Q1
Bismuth 214	sludge	0.15	U	0.08	U,Q1	liquid	34	U	18	U,Q1
Lead 212	sludge	0.92		0.18		liquid	117		28	
Lead 214	sludge	0.14	U	0.074	U,Q1	liquid	28	U	15	U,Q1
Protactinium 234M	sludge	30		12		liquid	17100		3300	
Radium (226)	sludge	0.24	U	0.13	U,Q1	liquid	54	U	29	U,Q1
Radium 228	sludge	0.8		0.32		liquid	87	U	46	U,Q1
Thallium 208	sludge	0.37		0.11		liquid	36		14	
Thorium 231	sludge	1.49		0.81		liquid	910		230	
Thorium 232	sludge	1.04		0.29		liquid	101		40	
Thorium 234	sludge	29.7		3.3		liquid	14200		1600	
Uranium 235	sludge	1.99		0.58		liquid	990		260	
Uranium 238	sludge	31.9		3.8		liquid	15900		1800	

Notes:
Samples analyzed by Method GA-01-R MOD
Samples collected on 3/3/04
Results are reported in pCi/g (sludge) and pCi/l (liquid)
Level II = Preliminary data validation
Qualifer:
U = Non-detect
Reason Code:
Q1 = Reporting limit less than minimum detectable concentration

Table 17

GTE Operations Support Incorporated
Former Sylvaina Electic Products Incorporated Facility - Hicksville, New York

Tank Cell 10
Severn Trent Laboratory
Isotopic Thorium and Uranium

Compound	10648-R-EX-G-10I20USTG-99.9-S2 UST G					10647-R-EX-W-10I20USTL-99.9-S2 UST L				
	Matrix	Result	Qualifier	Uncertainty	Level II	Matrix	Result	Qualifier	Uncertainty	Level II
Thorium 228	sludge	0.62		0.24		liquid	154		32	
Thorium 230	sludge	0.2		0.12	J,p	liquid	28		6.9	
Thorium 232	sludge	0.49		0.21		liquid	144		30	
Uranium 234	sludge	19.1		3.6		liquid	18200		4300	J,w
Uranium 235	sludge	0.97		0.22		liquid	910		230	J,w
Uranium 238	sludge	18.6		3.5		liquid	18600		4400	J,w

Notes:
Isotopic thorium analyzed by Method 3004/RP-725
Isotopic uranium analyzed by Method 3050/RP-725
Samples collected on 3/3/04
Results reported in pCi/g (sludge) and pCi/l (liquid)
Level II = Preliminary data validation
Qualifier:
J = Estimated Result. Result were flagged due to QC failure.
Reason Code:
p = Preparation blank contamination
w = Tracer recovery failure

FIGURES

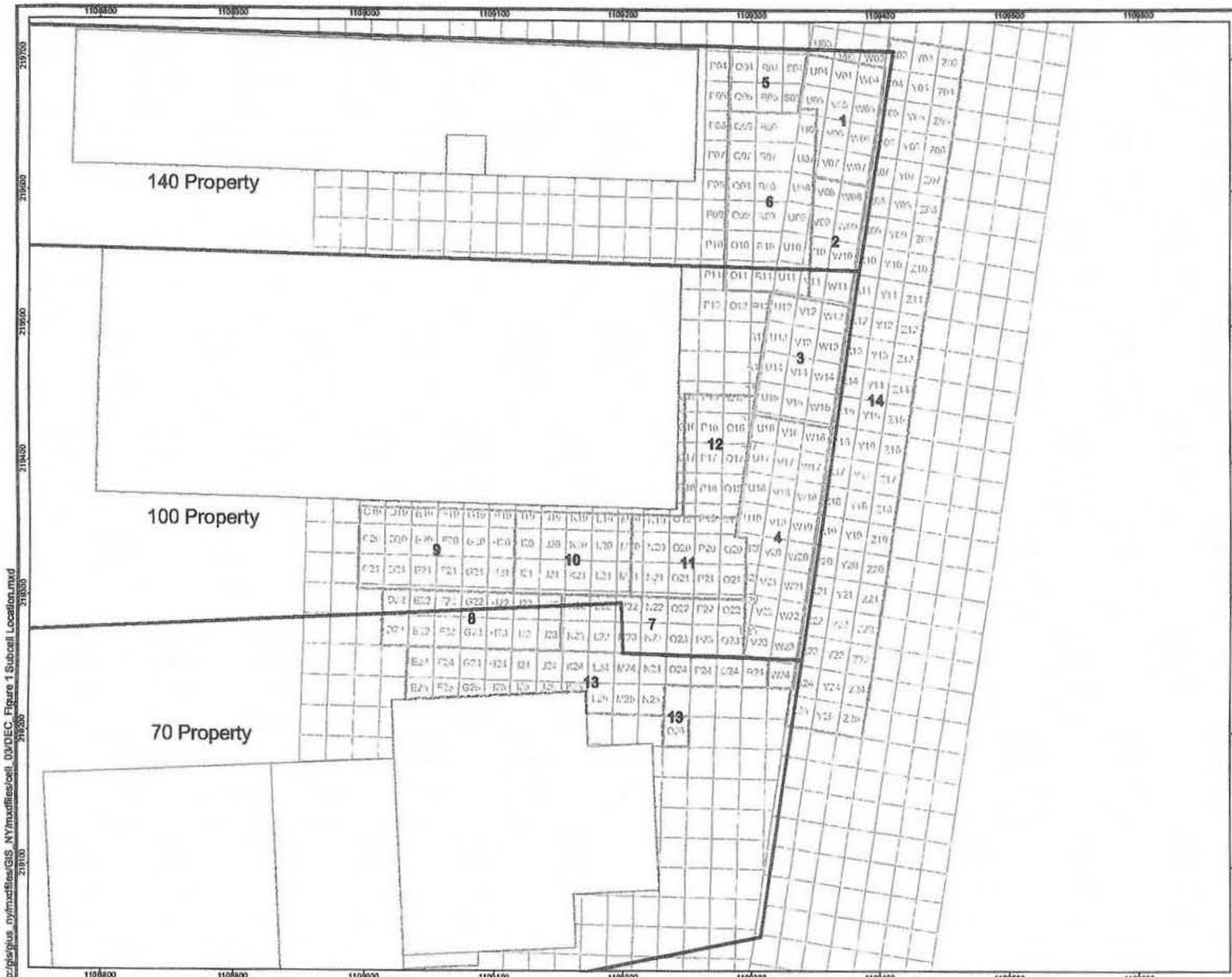


Figure 1
Cell and Subcell Locations

Legend

- Property Line
- Building
- Subcell Boundaries
- Cell Boundaries

Feet

0 30 60

Projection Information
Stateplane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00089-1

URS27010-030

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

ENVIROCON
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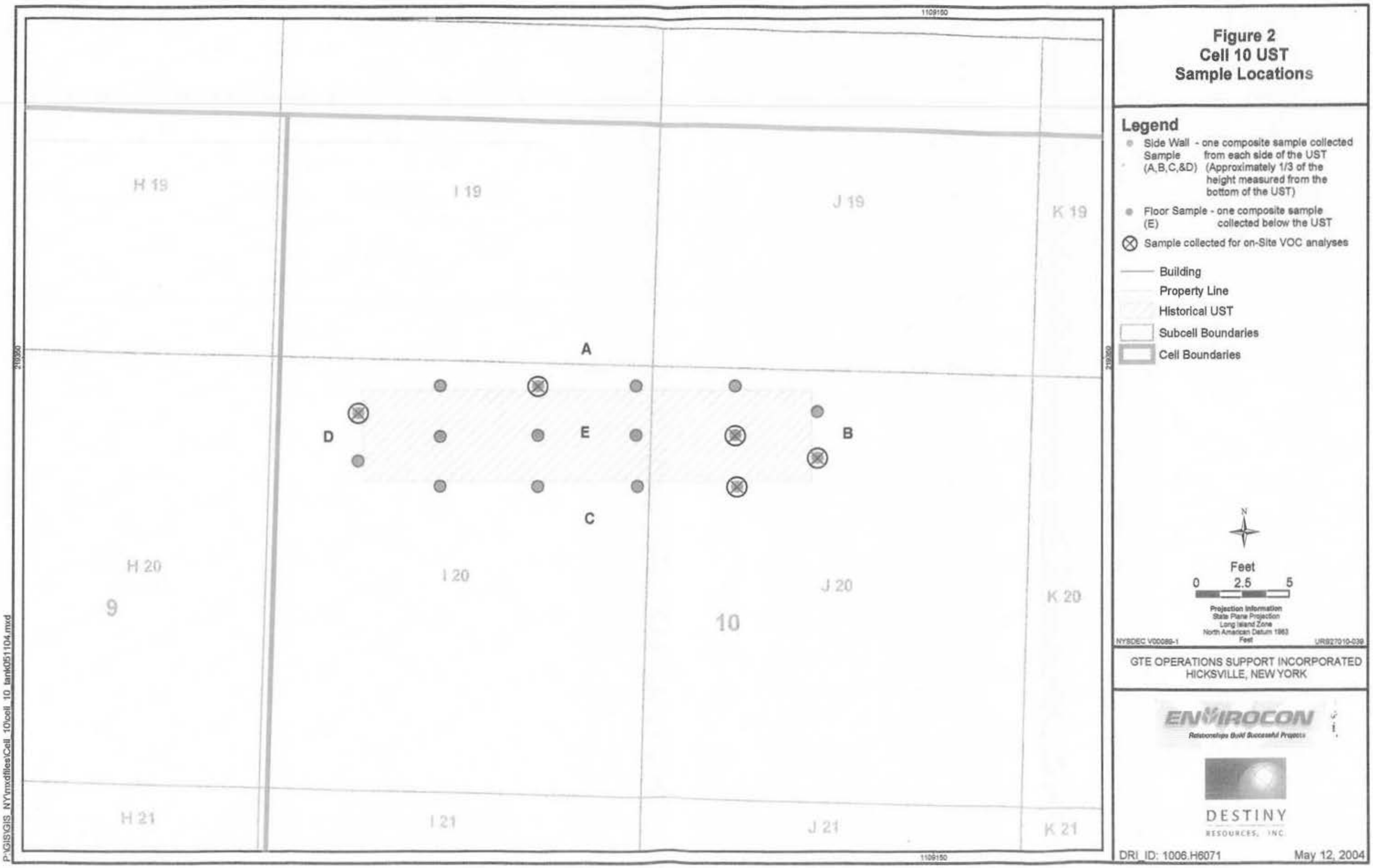


Figure 2
Cell 10 UST
Sample Locations

APPENDIX A

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	NYSDEC# V00089-1 URS # 27010-039

Photo No.	Date:
1	3/1/04

Direction Photo Taken:

Looking West.

Description:

Cell 10 UST.

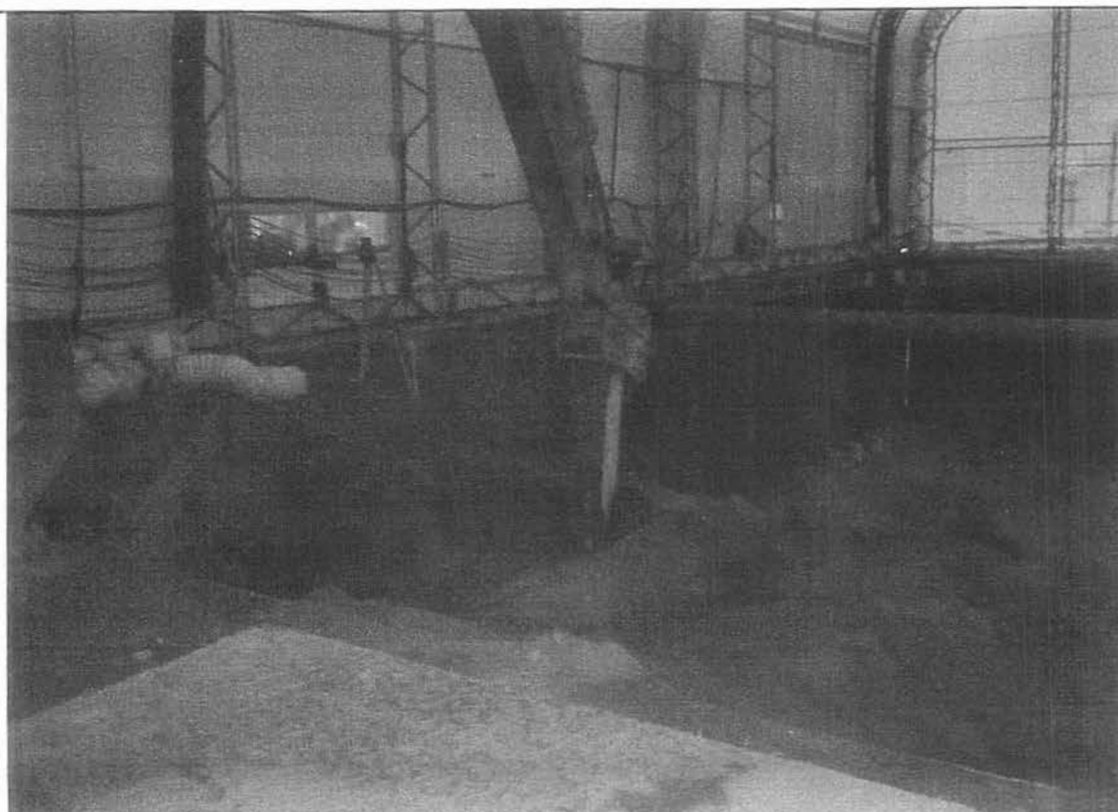
Photo No.	Date:
2	3/2/04

Direction Photo Taken:

Looking Northeast.

Description:

UST being opened by the excavator.



URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	NYSDEC# V00089-1 URS # 27010-039

Photo No. 3 **Date:** 3/9/04

Direction Photo Taken:

Looking East.

Description:

Ventilation placed over the UST.

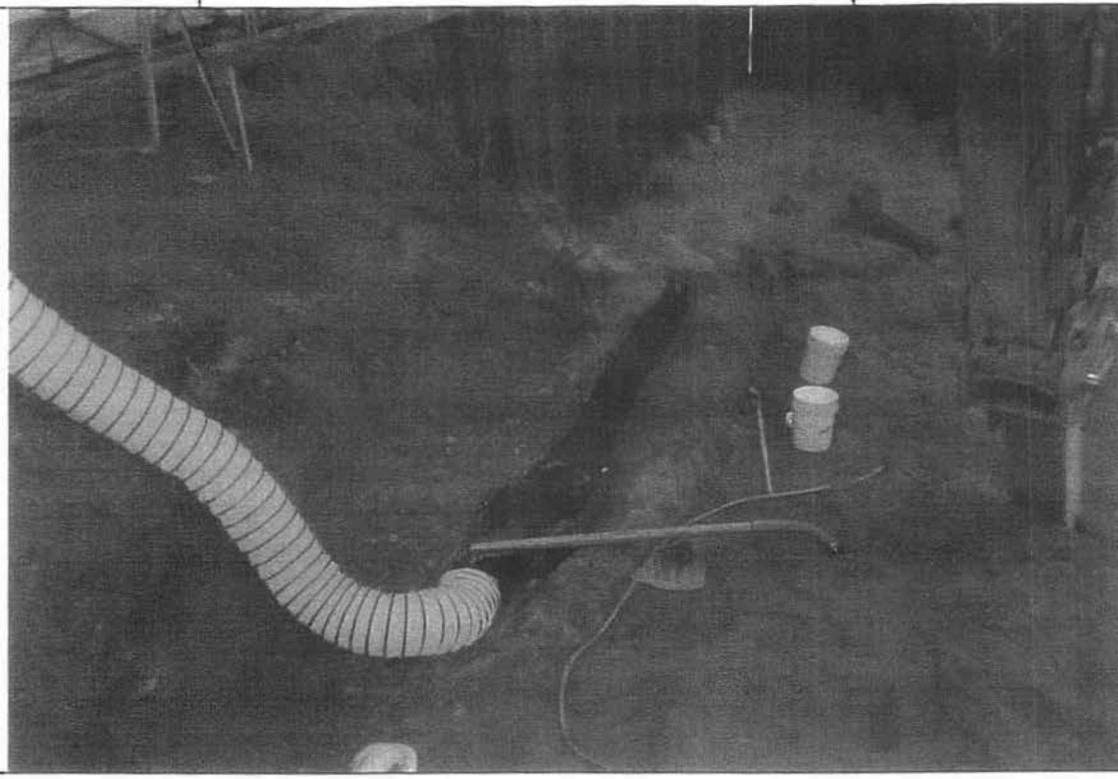


Photo No. 4 **Date:** 3/9/04

Direction Photo Taken:

Looking North.

Description:

Removing liquid from the UST.

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	
GTE Operations Support Incorporated	Former Sylvania Electric Products Incorporated Facility, Hicksville, New York	NYSDEC# V00089-1 URS # 27010-039

Photo No. 5 **Date:** 3/9/04

Direction Photo Taken:

Looking North.

Description:

Collecting a sample from the UST.

Photo No. 6 **Date:** 3/10/04

Direction Photo Taken:

Looking North.

Description:

UST opened, cleaned, and removed from original location in preparation for collection of UST bed samples.

APPENDIX B

Subsurface Anomaly Investigation Form — Anomaly ID:

Date: 3-1-04 Time: 0800

Cell # 10 Subcell# J20/I20

Anomaly Type/Material TANK - METAL

Anomaly Depth (ft) 4.0'

Sample Location (Inside, under etc) INSIDE, UNDER, AROUND @ 2/3 EXPOSED DEPTH

Size/Diameter (in.) 5'3" (63")

Contains material? (circle) yes no

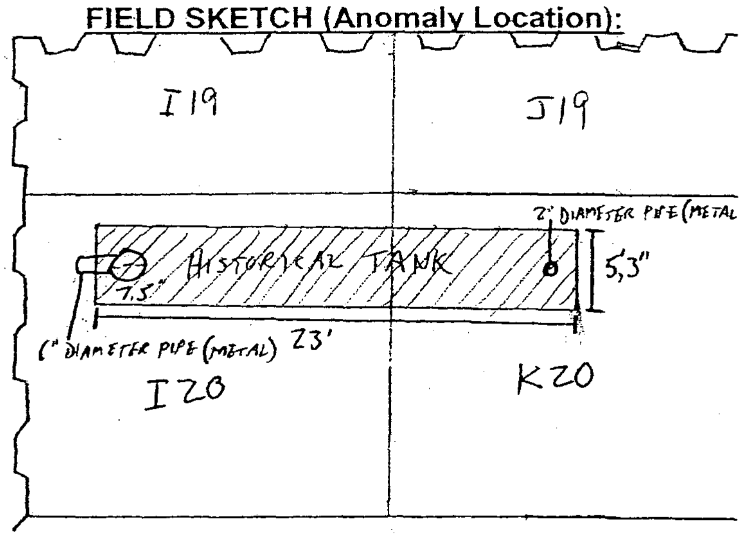
Type of material (color, consistency, etc.) 6" OF BROWN LIQUID, 8" OF BROWN/WHITE SLUDGE

Dimensions (feet) 23' length

Integrity INTACT - 7.5" DIAMETER HOLE AT WEST END

Photographed? (# of pictures) 18 yes no 3-1, 3-2, 3-4, 3-10

FIELD SKETCH (Anomaly Location):



Connections? pipes, tank, elbows, tees, 90, Ys, valves, other (describe):

2" DIAMETER PIPE LOCATED AT EAST END OF TANK REMOVED DURING EXCAVATION

CHEM Comments: LIQUID AND SLUDGE SAMPLES COLLECTED FROM TANK. A SAMPLE WAS COLLECTED FOR pH ONLY. PID READING IN BREATHING ZONE 0.0 PPM, IN TANK 12.2 PPM.

Sample Collected yes no (CONTENT, FILL (COMPOSITE) **Field Screening (ppm):** 12.2 **PID Serial #** 110-004546

Signatures: [signature] **Initials:** [initials] **Date:** 3-18-04

RAD INFOs:

Instrument:	2360	2350	2221	3030	Micro R
Serial number:	N/A	192617	N/A	191247	N/A
Probe serial number:	N/A	200576	N/A	N/A	N/A
Background:	N/A	123627	N/A	10/25	N/A

Survey results: (highest reading)

Loose surface(DPM/100cm2) α<MDA β<MDA **Loose surface (LAW)** α N/A β N/A

Direct reading N/A α N/A β **Gamma (ncpm)** 16330 **MicroR** N/A

Swipe Taken yes no

Sample Collected yes no * if yes, sent to gamma spec Data Sheet Attached yes no

Additional Radiological Information (Survey) yes no

Signatures: Wade Hipson **Initials:** TWH **Date:** 3-18-04

RAD Comments: LIQUID AND SLUDGE SAMPLES COLLECTED FOR RAD. COMPOSITE SAMPLES COLLECTED AT N, S, E, W WALLS OF TANK @ 2/3 EXPOSED DEPTH. SAMPLES COLLECTED 3-3-04.

BARCODE ID:

Stone #: CONTENT SAMPLES-52 Sample Time 1330-LIQUID, 1345-SLUDG

Sample Depth —— 4 oz Jars SEE LEFT

L[illegible]ID SAMPLES - 2 VOAs, 3 1L POLY, 2 500mL AMBER, 4 4-OZ JARS, SMALL JAR FOR pH

SLUDGE SAMPLES - 1 VOA, 3 500mL POLY, 1 4OZ JAR, SMALL JAR FOR pH.

TESTED OFF SITE FOR: Ni TCLP VOA pH

IGNITABILITY, REACTIVITY, CORROSIVITY, TOXICITY, TCLP VOCs, TCLP SVOCs, TCLP METALS, TCLP HERB, PEST, TOTAL VOCs

Subsurface Anomaly Investigation Form   Anomaly ID: 15071

Date: 3-1-04   Time: 0800

Cell # 10   Subcell# J20/I20

Anomaly Type/Material TANK - METAL

Anomaly Depth (ft) 4.0'

Sample Location (Inside, under etc) INSIDE, UNDER, AROUND @ 2/3 EXPOSED DEPTH

Size/Diameter (in.) 5'3" (63")

Contains material? (circle) yes no

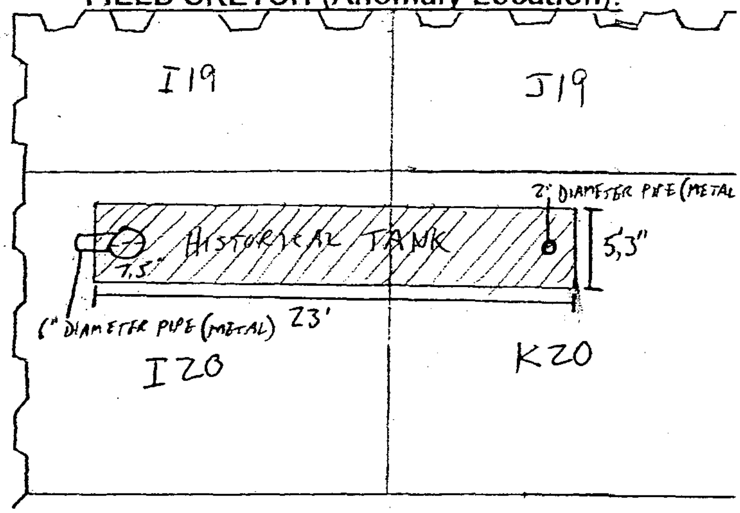
Type of material (color, consistency, etc.) 6" OF BROWN LIQUID, 8" OF BROWN/WHITE SLUDGE

Dimensions (feet) 23' length

Integrity INTACT - 7.5" DIAMETER HOLE AT WEST END

Photographed? (# of pictures) 18 yes no 3-1, 3-2, 3-4, 3-10

FIELD SKETCH (Anomaly Location):



Connections? pipes, tank, elbows, tees, 90, Ys, valves, other (describe):

2" DIAMETER PIPE LOCATED AT EAST END OF TANK REMOVED DURING EXCAVATION

CHEM Comments: LIQUID AND SLUDGE SAMPLES COLLECTED FROM TANK. A SAMPLE WAS COLLECTED FOR pH ONLY. PID READING IN BREATHING ZONE 0.0 PPM, IN TANK 12.2 PPM.

Sample Collected yes no (CONTENT, FILL (COMPOSITE)) **Field Screening (ppm):** 12.2 **PID Serial #** 110-004546

Signatures: [signature] **Initials:** [initials] **Date:** 3-18-04

RAD INFOs:

Instrument:	2360	2350	2221	3030	Micro R
Serial number:	N/A	192617	N/A	191247	N/A
Probe serial number:	N/A	200576	N/A	N/A	N/A
Background:	N/A	123627	N/A	10/25	N/A

Survey results: (highest reading)

Loose surface(DPM/100cm2) α<MDA β<MDA **Loose surface (LAW)** α N/A β N/A

Direct reading N/A α N/A β **Gamma (ncpm)** 16330 **MicroR** N/A

Swipe Taken yes no

Sample Collected yes no * if yes, sent to gamma spec   Data Sheet Attached yes no

Additional Radiological Information (Survey) yes no

Signatures: Wade Hipron **Initials:** TWH **Date:** 3-18-04

RAD Comments: LIQUID AND SLUDGE SAMPLES COLLECTED FOR RAD. COMPOSITE SAMPLES COLLECTED AT N, S, E, W WALLS OF TANK @ 2/3 EXPOSED DEPTH. SAMPLES COLLECTED 3-3-04.

BARCODE ID:

Stone #: CONTENT SAMPLES-52 Sample Time 1330-LIQUID, 1345-SLUDGE

LIQUID SAMPLES - 2 VOAs, 3 1L POLY, 2 500mL AMBER, 4 4oz JARS, SMALL JAR FOR pH

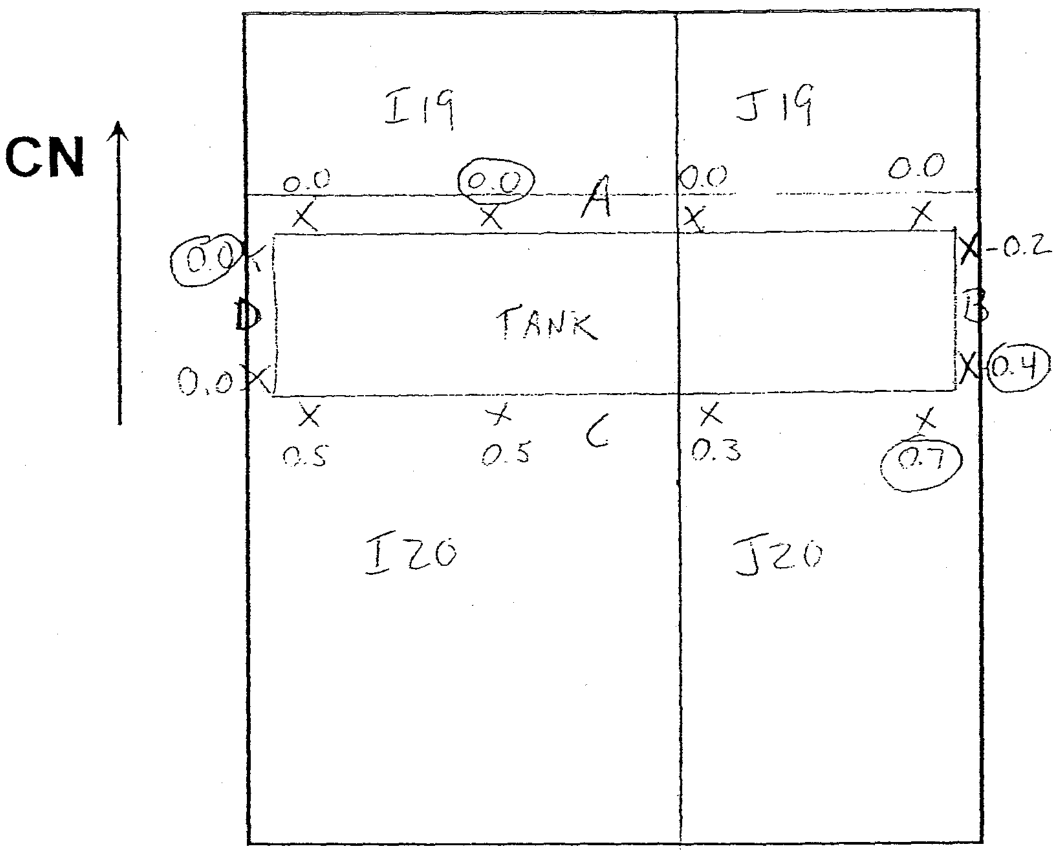
SLUDGE SAMPLES - 1 VOA, 3 500mL POLY, 1 4oz JAR, SMALL JAR FOR pH.

Sample Depth ——   4 oz Jars SEE LEFT

TESTED OFF SITE FOR: Ni TCLP VOA pH

IGNITABILITY, REACTIVITY, CORROSIVITY, TOXICITY, TCLP VOCs, TCLP SVOCs, TCLP METALS, TCLP HERB, PEST, TOTAL VOCs

UST



Cell: 10

Subcell: J20, I20

Background: 23627

	A	B	C	D
	3-10-04	3-1-04	3-9-04	3-10-04
PID Bkg	1.2	0.0	0.5	2.5
PID	0.0	0.4	0.7	0.0
Time	1000	1135	1530	0830
Stone #	10476	10065	10458	10474
CPM	24040	16330	23775	34885
Depth	8.5	8.5	7.0	8.5

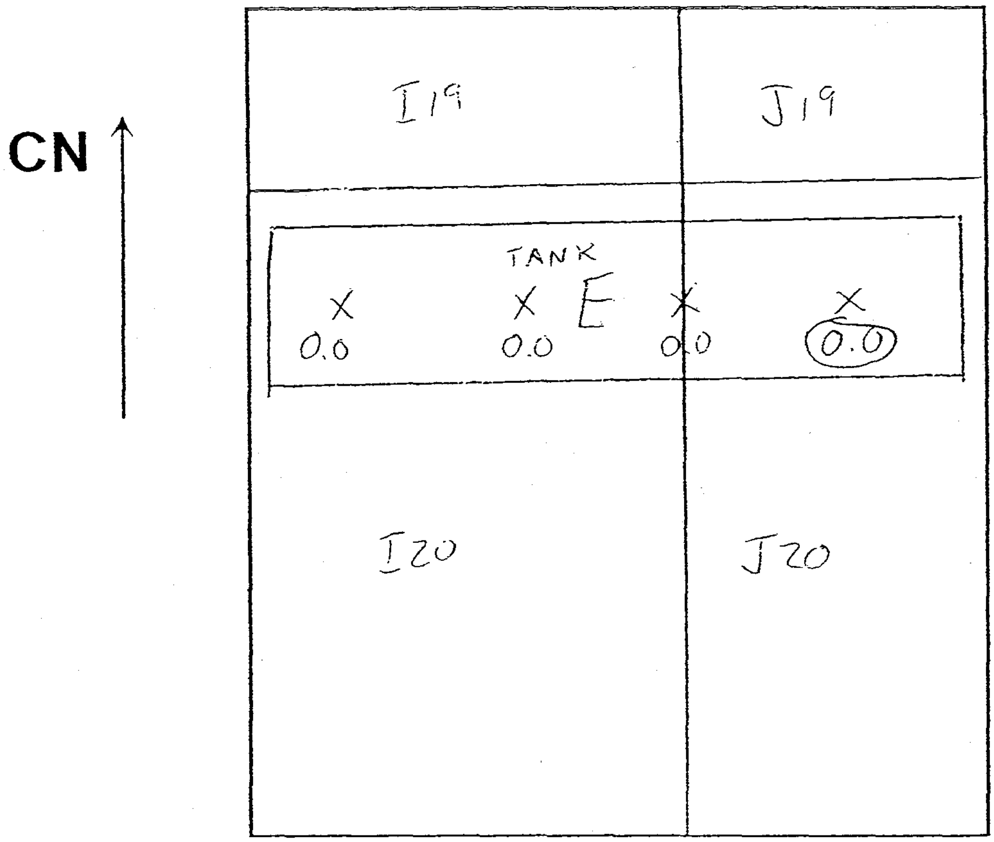
Comments: COMPOSITE SAMPLES COLLECTED AT EACH LOCATION

SAMPLES COLLECTED FROM 3-1-04 TO 3-10-04

Signature

Date 3-18-04

UST



Cell: 10 Background: 36395

Subcell: J20, I20

3-10-04

	A	B	C	D
PID Bkg	1.4			
PID	0.0			
Time	0950			
Stone #	10475			
CPM	22439			
Depth	10.5			

Comments: COMPOSITE SAMPLE COLLECTED

Signature [signature]

Date 3-18-04

verizon

GTE Operations Support Incorporated
600 Hidden Ridge Drive (HQE03E75)
Irving, Texas 75038
(972) 718-4806

March 18, 2004

Mr. Jerry Riggi
Division of Environmental Remediation
New York State Department of Environmental Conservation
Bureau of Hazardous Waste and Radiation Management
Radiation Section, Eighth Floor
625 Broadway
Albany, NY 12233-7255

Mr. Robert Stewart
Division of Environmental Remediation
New York State Department of Environmental Conservation
SUNY Campus Loop Bldg. 40
Stony Brook, New York 11790-2356

Re: **Voluntary Cleanup Agreement**
For: Former Sylvania Electric Products Incorporated Facility
By: GTE Operations Support Incorporated
Site #: V-00089-1 Index #: W1-0903-01-12

Cell 11: Analytical Results of the Tube

Dear Mr. Riggi:

As you recall, on November 7, 2003, during excavation in Enclosure II, Cell 11, a silver metal tube was uncovered in subcell N21 (Appendix A). On November 17, 2003, the silver metal tube and contents were shipped to BWX Technologies (BWXT) Services Inc. – Nuclear Environmental Laboratory Services (NELS), 2016 Mt. Athos Road, Lynchburg, Virginia 24504-5447, for analysis. The NELS is certified by the New York State Department of Health – Environmental Laboratory Approval Program (ELAP ID 11532) and the State of Utah Department of Health (Certificate ID BWNU). The tube was conservatively manifested and shipped under Department of Transportation (DOT) classification of Uranium Metal – Pyrophoric. Prior to shipping, the tube and its contents were transferred from the plastic wrap and container and repackaged in a metal container with positive closure. The container was filled with sand and the container atmosphere was made inert with argon gas. The shipment was received by BWXT on November 18, 2003.

Appendix B is the chain of custody and Appendix C is photographs of the tube and its contents while still in Enclosure II, Cell 11 and a photograph taken from BWXT.

At BWXT, uranium isotopic analysis was performed on the tube contents to assess if the material was enriched in Uranium-235 (U-235). The analytical results (Appendix D) indicate U-235 content was slightly below the content existing in natural uranium, indicating that the uranium was present in depleted form. As depleted uranium (DU), the material can be handled under the Site's existing New York State Department of Labor Radioactive Materials License Number 3095-4330.

To evaluate pyrophoricity, the chemical composition of the tube contents was analyzed using X-ray diffraction (XRD). The analyst separated the material into two, generally discrete samples. One represented the dark material, the other the yellow material. The analytical results (Appendix E) indicate that both the dark and yellow materials are oxides of uranium. The dark material is a uranium dioxide (UO_2) and the yellow material is uranium trioxide (UO_3), possibly with some hydration phases such as $UO_3 \cdot H_2O$. Neither of these oxides is pyrophoric.

The tube contents were also examined using Inductively-Coupled Plasma (ICP) Spectroscopy to assess metal constituents. The results (Appendix F) correlate with the XRD results. The primary constituent is uranium. Molybdenum is also present. Other metals, such as aluminum, iron, etc., are present at less than the laboratory reporting limits. The laboratory reporting limits for a majority of the metals are near or below approximately 0.01%.

The silver metal tube itself underwent ICP metals analysis to assess its chemical composition. The tube consists primarily of iron, chromium, and nickel with small amounts of cobalt and manganese (Appendix G). This analysis indicated the tube material is a stainless steel-type alloy.

If you have any questions, please feel free to contact me.

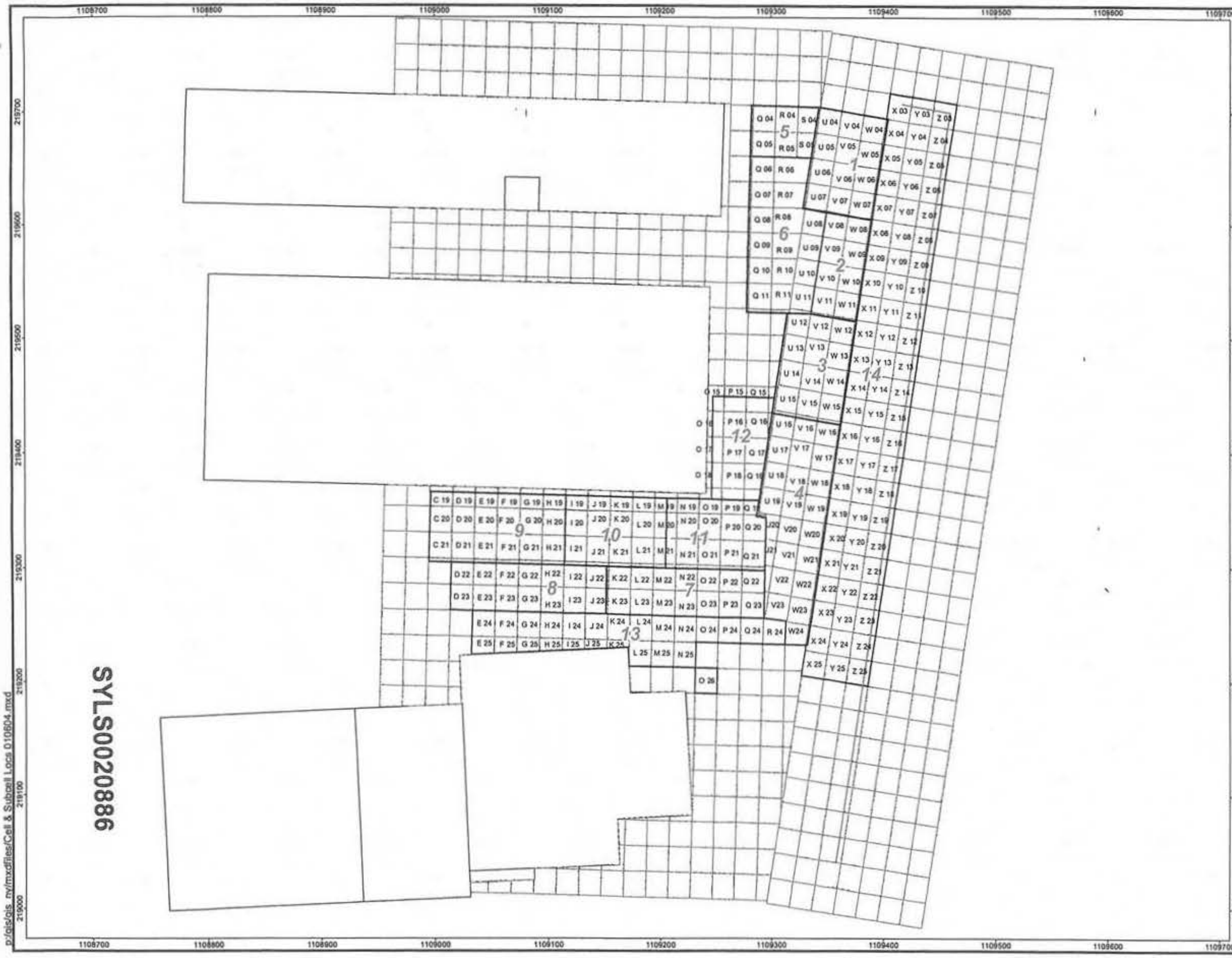
Sincerely,

Jean Agostinelli
Vice President and Controller

Attachments:

Appendix A – Cell and Subcell Locations
Appendix B – Chain of Custody
Appendix C – Photographs
Appendix D – Uranium Isotopic Results of Tube Contents
Appendix E – XRD of Tube Contents
Appendix F – ICP of Tube Contents
Appendix G – ICP of the Tube

APPENDIX A



Cell and Subcell Locations

Legend

- Building
- Temporary Fence Line
- Subcell Boundaries
- Cell Boundaries

Note: Data are not validated.

N

Feet

0 30 60

Projection Information
Stateplane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00089-1

URS27010-039

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

ENVIROCON
Relationships Build Successful Projects

DESTINY
RESOURCES, INC.

DRI ID: 1006.H5555 January 6, 2004

p:/gis/gis_nv/mxdfiles/Cell & Subcell Locs 010604.mxd

SYLS0020886

APPENDIX B

Chain of Custody Record

BWX Technologies, Inc.

TRENT **STL** SN

~~Severn Trent Laboratories, Inc.~~ SN

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
GTE OSI / URS	C. Scholl / P. Cox	11-18-03	113697

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
1701 Golf Rd., Suite 1000	847-228-0707 / 847-228-1115		Page 1 of

City	State	Zip Code	Site Contact	Lab Contact
Rolling Meadows	IL	60008	Lester G. / Shane B.	Kenneth L.

Project Name and Location (State): GTE OSI Hicksville, NY

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.: GTE HQE 03060

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Metal Anomaly	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Ar Purge	Std. metals by ICP	Total Uranium by ICP	Isotopic Uranium	Chemical Form by SEM	Total Molybdenum by ICP	Special Instructions/ Conditions of Receipt
07025-C-WS-A-11N21-08.0-S2	11-7-03	1145					X							X	X	X		X	X	
07025-A-WS-A-11N21-08.0-S2	↓	1145					X							X			X			

*Possible Hazard Identification: Radioactive Pyrophoric Uranium
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: * ☒ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other____

QC Requirements (Specify): *or ASAP - Call RSO (Brightwell) @ (970) 481-5302 W/ Ve

	Date	Time		Date	Time
1. Relinquished By: Shane Brightwell	11/18/03	1600	1. Received By: Tommy Moch	11/18/03	1600
2. Relinquished By: Tommy Moch	11/18/03	1652	2. Received By: George P. Amato	11/18/03	1652
3. Relinquished By: George P. Amato	11/19/03	10:15 AM	3. Received By: C E Bartlett	10-19-03	1016

Comments: NYSDEC: V-00089-1; URS: 27010-039 / *Based on preliminary Field assessment

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

SYLS0020888

APPENDIX C

PHOTOGRAPHIC LOG

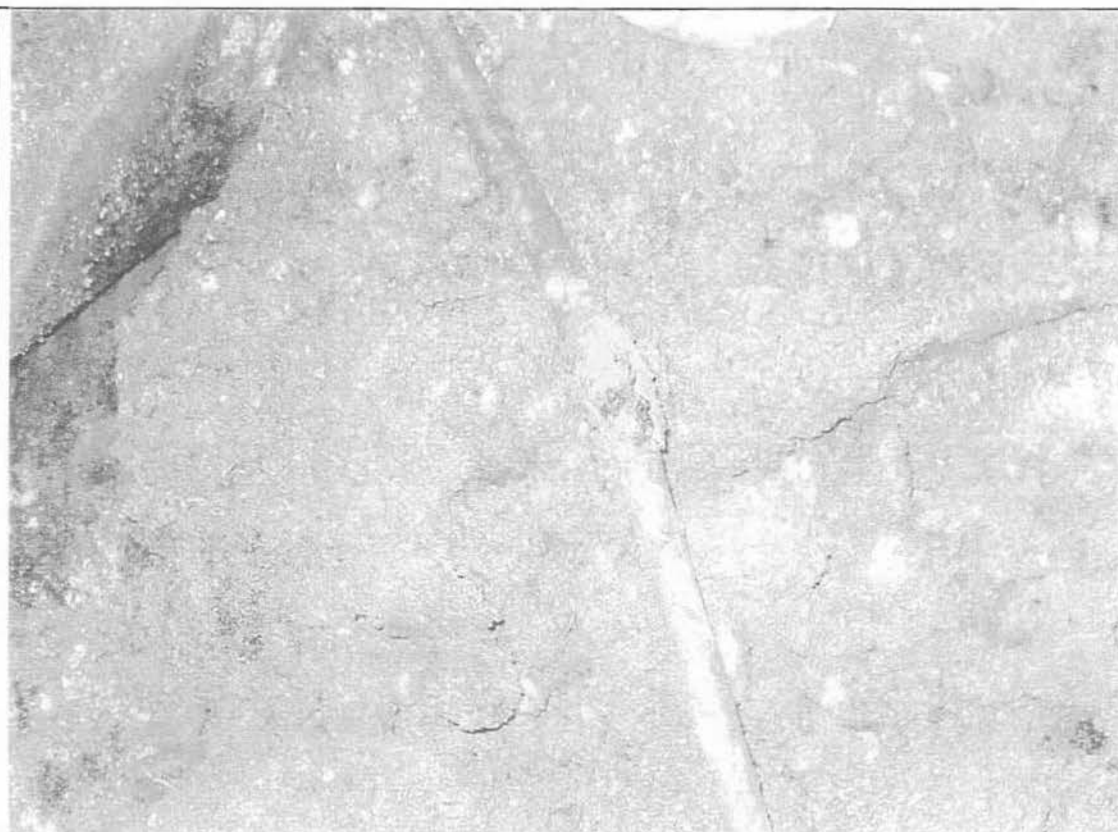
Client Name: GTE Operations Support Incorporated	Site Location: Former Sylvania Electric Products Facility, Hicksville, NY	NYSDEC# V00089-1 URS # 27010-039

Photo No.	Date:
1	11/7/03

Description:
Side view of tube adjacent to location of discovery in Cell 11, subcell N21.

Photo No.	Date:
2	11/7/03

Description:
Front view of tube adjacent to location of discovery in Cell 11, subcell N21.

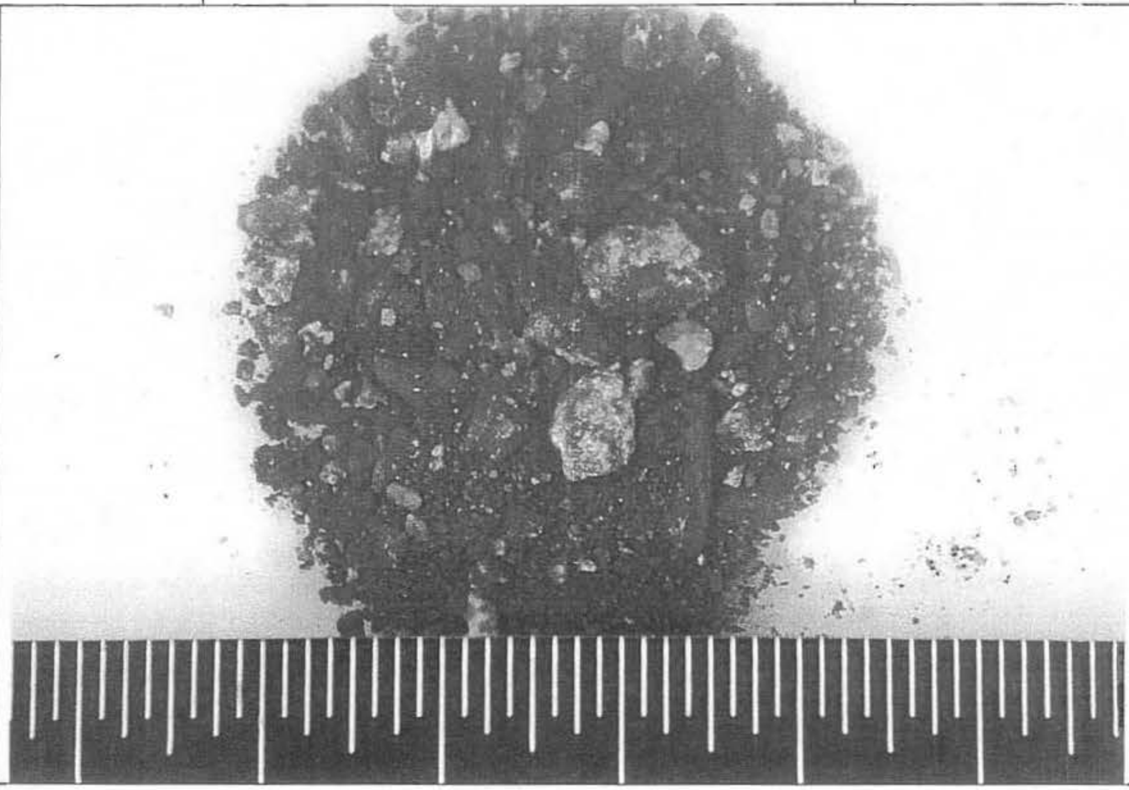


PHOTOGRAPHIC LOG

Client Name: GTE Operations Support Incorporated	Site Location: Former Sylvania Electric Products Facility, Hicksville, NY	NYSDEC# V00089-1 URS # 27010-039

Photo No.	Date:
3	11/17/03

Description:
BWXT photo of representative sample from tube contents.



APPENDIX D

A N A L Y S I S   R E P O R T

BWXT Services, Inc. - NEL Services • 2016 Mt. Athos Rd. • Lynchburg, VA 24504-5447 • (434) 522-5165 • Fax (434) 522-6860

Report Date:	January 6, 2004	**Report #:**	0312004	**NELS Contract #:**	1304-001-31-98
Customer:	GTE Operations Support	**Customer Contact:**	Kelly Epperson	**Customer Authorization #:**	COC 113697
Project Description:	Tube / Tube Deposit Characterization	**Sample Description:**		See Attached COC / Analysis Request	
Sample Receipt Date:	November 20, 2003	**Sample Collection/Reference Date:**		See Attached COC / Analysis Request	
		Total pages in this report:		7 **including** 6 **page(s) of attachments**	

Comments: [1] Sample preparation, for Metals Analysis, by Method SW846 3052

Customer Sample ID	NELS Sample ID	Analysis Method	Analyte	Result	2 Sigma Uncertainty	MDA	Units (*)	Preparation Date	Analysis Date	Comments
027025-R-WS (SOLID DEPOSIT)	0312004-01	Alpha Spec	U-232	3.84E+02	2.44E+02	6.34E+02	pCi/g	12/04/03	12/05/03	
027025-R-WS (SOLID DEPOSIT)	0312004-01	Alpha Spec	U-234	7.71E+04	7.27E+03	4.58E+02	pCi/g	12/04/03	12/05/03	
027025-R-WS (SOLID DEPOSIT)	0312004-01	Alpha Spec	U-235	8.27E+03	1.29E+03	3.76E+02	pCi/g	12/04/03	12/05/03	
027025-R-WS (SOLID DEPOSIT)	0312004-01	Alpha Spec	U-236	2.65E+03	6.70E+02	3.76E+02	pCi/g	12/04/03	12/05/03	
027025-R-WS (SOLID DEPOSIT)	0312004-01	Alpha Spec	U-238	2.65E+05	2.31E+04	3.76E+02	pCi/g	12/04/03	12/05/03	
027025-R-WS (SOLID DEPOSIT)	0312004-01	SW846 6010B	ICP Metals	See Metals Analysis Data Sheet (Attached)				11/25/03	11/26/03	[1]
027025-R-WS (TUBE MATERIAL)	0312004-02A	SW846 6010B	ICP Metals	See Metals Analysis Data Sheet (Attached)				12/09/03	12/10/03	[1]
027025-R-WS (BLACK DEPOSIT)	0312004-01A	XRD	Structure	See X-Ray Diffraction Scan (Attached)				12/03/03	12/03/03	
027025-R-WS (YELLOW DEPOSIT)	0312004-01B	XRD	Structure	See X-Ray Diffraction Scan (Attached)				12/03/03	12/03/03	
027025-R-WS (TUBE MATERIAL)	0312004-02A	XRD	Structure	See X-Ray Diffraction Scan (Attached)				12/08/03	12/08/03	

Data Released By: *Signature on File* **Date:** *01/06/04*

Name /Title: James L. Clark / Project Manager

Unless noted as a comment, this report meets all requirements of NELAC

(*) All results are reported "as received" unless otherwise specified: (d) = dry weight, (w)=wet weight

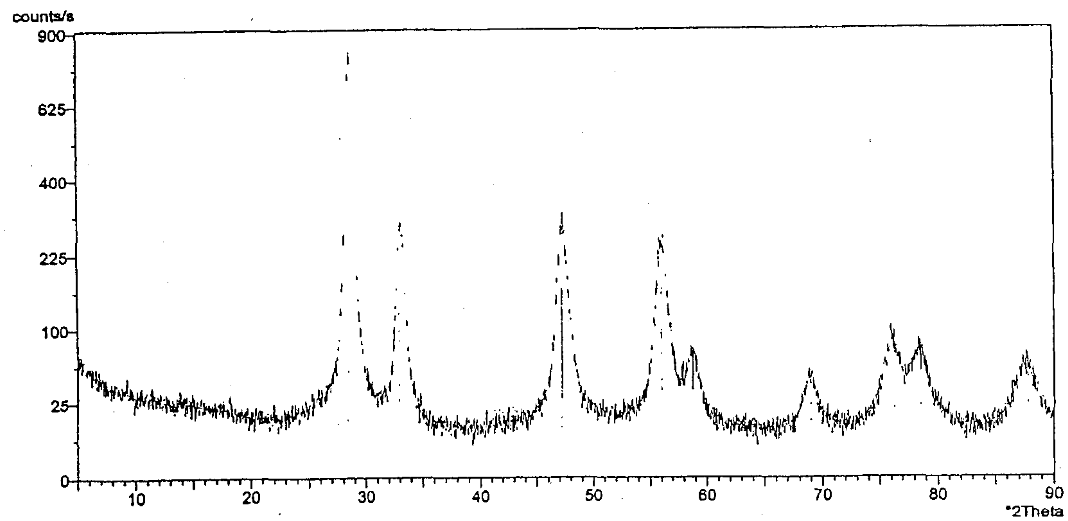
SYLS0020893

APPENDIX E

BWXT Services, Inc. - NEL Services • 2016 Mt. Athos Rd. • Lynchburg, VA 24504-5447 • (434) 522-5165 • Fax (434) 522-6860

X'Pert Graphics & Identify
Graph: SDG0312004-01A

Rick DeVault
12/3/03 10:19



20-1344 Uraninite, syn UO2.25

Philips Analytical

SYLS0020895

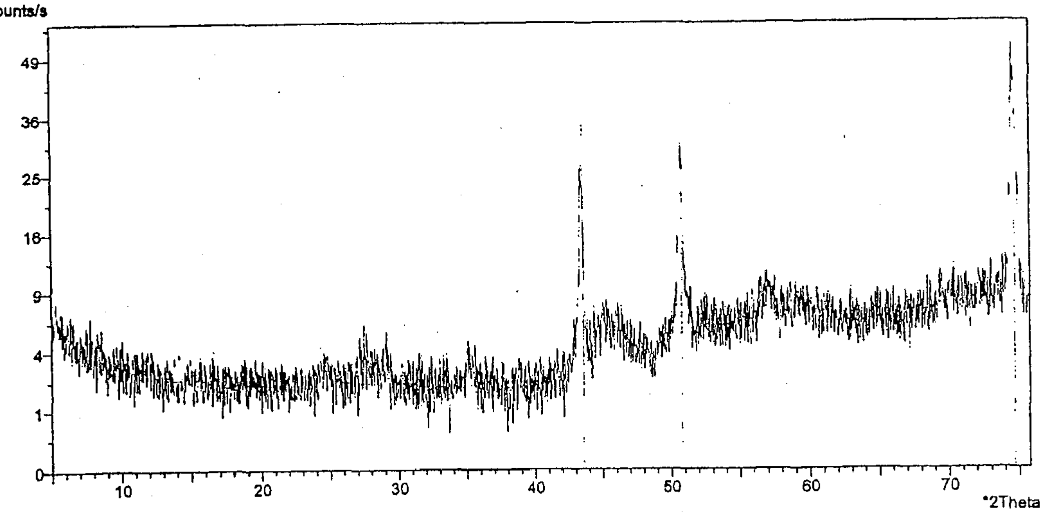
(*) All results are reported "as received" unless otherwise specified: (d) = dry weight, (w)=wet weight

ANALYSIS REPORT

BWXT Services, Inc. - NEL Services • 2016 Mt. Athos Rd. • Lynchburg, VA 24504-5447 • (434) 522-5165 • Fax (434) 522-6860

X'Pert Graphics & Identify
Graph: SDG0312004-02A

Rick DeVault
12/8/03 09:45



33-0397 Chromium Iron Nickel Cr0.19Fe0.7Ni0.11

Philips Analytical

SYLS0020896

(*) All results are reported "as received" unless otherwise specified: (d) = dry weight, (w)=wet weight

APPENDIX F

APPENDIX G

BWXT Services, Inc. - NEL Services • 2016 Mt. Athos Rd. • Lynchburg, VA 24504-5447 • (434) 522-5165 • Fax (434) 522-6860

METALS ANALYSIS DATA SHEET

Lab Name BWXS-NELS Lab Code BWLVA Contract TBD

SOW # COC 113697 LTI# NA SDG# 0312004

Field ID # Tube Deposit Matrix: Solid Lab ID# 0312004-01

% Solids 100.0 Date Received 11/20/03

Concentration Units: mg/kg (as received)

CAS NO.	ANALYTE	CONCENTRATION	C	Q	M
7429-90-5	Aluminum	2,240	U		P
7440-36-0	Antimony	25.0	U	N	P
7440-38-2	Arsenic	167	U	N	P
7440-39-3	Barium	5.56	U		P
7440-41-7	Beryllium	9.63	U		P
7440-43-9	Cadmium	1.38	U		P
7440-70-2	Calcium	714	U		P
7440-47-3	Chromium	2.85	U	N	P
7440-48-4	Cobalt	2.26	U		P
7440-50-8	Copper	62.6	U	N	P
7439-89-6	Iron	3,650	U		P
7439-92-1	Lead	24.6	U	N	P
7439-95-4	Magnesium	846	U		P
7439-96-5	Manganese	3.62	U		P
7440-02-0	Nickel	6.09	U		P
7440-09-7	Potassium	635	U	N	P
7782-49-2	Selenium	169	U		P
7440-22-4	Silver	6.73	U	N	P
7440-23-5	Sodium	308	U		P
7440-28-0	Thallium	42.5	U	N	P
7440-62-2	Vanadium	3.24	U	N	P
7440-66-6	Zinc	55.1	U		P
7440-61-1	Uranium	672,000			P
7439-98-7	Molybdenum	24,300			P

Comments: Method: P = Inductively Coupled Plasma (ICP) Spectrophotometry

Qualifiers:

U: Analyte not detected. The Detection Limit is stated.

N: Spike Sample Recovery exceeded Acceptance Range.

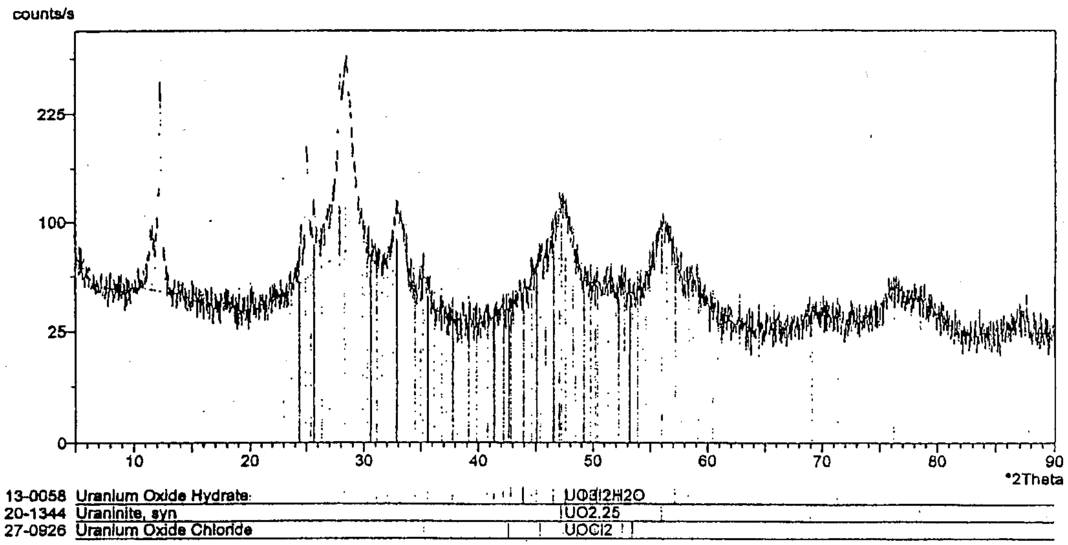
FORM #1

(*) All results are reported "as received" unless otherwise specified: (d) = dry weight, (w)=wet weight

BWXT Services, Inc. - NEL Services • 2016 Mt. Athos Rd. • Lynchburg, VA 24504-5447 • (434) 522-5165 • Fax (434) 522-6860

X'Pert Graphics & Identify
Graph: SDG0312004-01B

Rick DeVault
12/3/03 11:55



Philips Analytical

(*) All results are reported "as received" unless otherwise specified: (d) = dry weight, (w)=wet weight

ANALYSIS REPORT

BWXT Services, Inc. - NEL Services · 2016 Mt. Athos Rd. · Lynchburg, VA 24504-5447 · (434) 522-5165 · Fax (434) 522-6860

METALS ANALYSIS DATA SHEET

Lab Name BWXS-NELS Lab Code BWLVA Contract TBD

SOW # COC 113697 LTI# NA SDG# 0312004

Field ID # Tube Metal Matrix: Solid Lab ID# 0312004-02

% Solids 100.0 Date Received 11/20/03

Concentration Units: mg/kg (as received)

CAS NO.	ANALYTE	CONCENTRATION	C	Q	M
7429-90-5	Aluminum	855	B		P
7440-36-0	Antimony	285	U		P
7440-38-2	Arsenic	688	B		P
7440-39-3	Barium	16.9	B		P
7440-41-7	Beryllium	1.69	U		P
7440-43-9	Cadmium	15.7	U		P
7440-70-2	Calcium	548	U		P
7440-47-3	Chromium	188,000			P
7440-48-4	Cobalt	1,800			P
7440-50-8	Copper	3,360			P
7439-89-6	Iron	705,000			P
7439-92-1	Lead	344	B		P
7439-95-4	Magnesium	228	U		P
7439-96-5	Manganese	16,800			P
7440-02-0	Nickel	97,800			P
7440-09-7	Potassium	1,350	U		P
7782-49-2	Selenium	283	U		P
7440-22-4	Silver	55.1	U		P
7440-23-5	Sodium	755	B		P
7440-28-0	Thallium	543	B		P
7440-62-2	Vanadium	336	B		P
7440-66-6	Zinc	68.5	B		P
7439-98-7	Molybdenum	2,420	B		P

Comments: Method: P = Inductively Coupled Plasma (ICP) Spectrophotometry

Qualifiers:

U: Analyte not detected. The Detection Limit is stated.

B: Analyte detected, but at a concentration < 10X the Detection Limit.

FORM #1

(*) All results are reported "as received" unless otherwise specified: (d) = dry weight, (w)=wet weight

GTE Operations Support Incorporated
Basking Ridge, New Jersey

Former Sylvania Electric Products Incorporated Facility Hicksville, NY Voluntary Cleanup Program Site No. V00089-1

Data Report P118, MWP110-355, MWP110-440, MWP114-170, and MWP114-290

April 2008

Report Prepared By:

Malcolm Pirnie, Inc.

17-17 Route 208 North
Fair Lawn, New Jersey 07410
201.797.7400

4563001

MALCOLM PIRNIE

LEGEND

PROFILE LOCATION - DATA INCLUDED IN THE MALCOLM PIRNIE DATA REPORT DATED JANUARY 2008.

PROFILE LOCATION

MONITORING WELL LOCATION

NOTES

1. AERIAL IMAGE FROM NYS GIS CLEARINGHOUSE HIGH RESOLUTION DIGITAL ORTHOIMAGERY (6-INCH RESOLUTION - 2004).

SCALE IN FEET

0 250 500 1000

MALCOLM PIRNIE

GTE OPERATIONS SUPPORT, INC.
HICKSVILLE, NY
FORMER SYLVANIA ELECTRIC PRODUCTS FACILITY

PROFILE AND MONITORING WELL LOCATIONS COMPLTED IN 2007

APRIL 2008

FIGURE 1

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Client: GTEOSI
Location: Hicksville, NY
Date Sampled: 10/16/2007-11/16/2007
Date Analyzed: 10/16/2007-11/16/2007

Matrix: Water

HOLE ID = P-118

Depth	VOC DATA, ug/L Vinyl Chloride Value	Q	DF	t-Dichloroethene Value	Q	DF	c-Dichloroethene Value	Q	DF	Trichloroethene Value	Q	DF	Tetrachloroethene Value	Q	DF	% SS
75.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
85.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	123
98.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	122
105.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116
114.85	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	125
125.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	129
135.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
157.85	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	115
165.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
175.00	1	U	1	1	U	1	2		1	42		1	1		1	108
185.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
195.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	115
204.15	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	121
215.00	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	115
223.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
233.38	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
241.50	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	115
252.15	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
259.60	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	120
286.50	1	U	1	1	U	1	1	U	1	1	U	1	7		1	113
294.35	1	U	1	1	U	1	1	U	1	4		1	2		1	111
322.45	1	U	1	1	U	1	1	U	1	1	U	1	1		1	112
331.10	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
340.00	1	U	1	1	U	1	1	U	1	1	U	1	1		1	118
350.00	1	U	1	1	U	1	1	U	1	1	U	1	1		1	109
361.55	1	U	1	1	U	1	1		1	1	U	1	5		1	109
370.00	1	U	1	1	U	1	1	U	1	3		1	4		1	102
380.00	1	U	1	1	U	1	1	U	1	2		1	1		1	110
389.85	1	U	1	1	U	1	1	U	1	21		1	4		1	116
401.50	1	U	1	1	U	1	1	U	1	22		1	4		1	101
409.55	1	U	1	1	U	1	1	U	1	36		1	7		1	107
418.70	1	U	1	1	U	1	1	U	1	49		1	13		1	105
426.40	1	U	1	1	U	1	2		1	150		1	59		1	106
441.70	1	U	1	1	U	1	1		1	120		1	48		1	110
450.00	1	U	1	1	U	1	10		1	620		24	130		1	104
458.70	1	U	1	1	U	1	1		1	180		1	99		1	104
491.60	1	U	1	1	U	1	1	U	1	160		1	120		1	105
501.00	1	U	1	1	U	1	1		1	220		1	170		1	111
511.50	1	U	1	1	U	1	1		1	220		1	280		1	112
519.10	1	U	1	1	U	1	3		1	370		1	310		1	113
531.50	1	U	1	1	U	1	2		1	230		1	280		1	109
537.40	1	U	1	1	U	1	1	U	1	57		1	64		1	112
550.10	1	U	1	1	U	1	1	U	1	100		10	140		10	112
570.85	1	U	1	1	U	1	1	U	1	92		1	110		1	110
580.70	1	U	1	1	U	1	1	U	1	29		1	41		1	125

Depth	INORGANIC DATA, mg/L Fe^{+2}	Fe, Total	Ammonia	Chloride	Chlorine, Total
75.00	0.26	0.56	0.15	56	0.08
85.00	0.21	0.61	0.17	44	ND
98.00	0.34	0.52	0.15	50	0.04
105.00	0.39	0.55	0.11	58	0.06
114.85	0.14	0.20	0.04	43	0.02
125.00	0.17	0.23	0.08	36	0.08
135.00	0.24	0.43	0.06	60	0.08
157.85	0.09	0.18	0.05	46	ND
165.00	0.21	0.58	0.15	42	0.13
175.00	0.17	0.36	0.07	31	ND
185.00	0.11	0.16	0.06	28	ND
195.00	0.45	0.54	0.11	29	ND
204.15	1.15	9.40	1.20	33	0.57
215.00	0.18	0.67	0.26	40	0.60
223.80	0.33	0.43	0.09	52	0.04
233.38	0.36	0.38	0.12	57	0.04
241.50	0.15	0.33	0.11	64	0.04
252.15	0.51	0.76	0.23	60	0.15
259.60	0.74	0.78	0.08	52	ND
286.50	0.15	0.22	0.07	39	0.05
294.35	2.00	2.07	0.14	32	ND
322.45	0.83	1.98	0.37	37	0.04
331.10	0.25	0.29	0.04	38	ND
340.00	0.35	0.35	0.02	45	ND
350.00	0.54	0.58	0.04	33	ND
361.55	0.14	0.16	0.09	45	ND
370.00	0.29	0.32	0.13	55	ND
380.00	0.23	0.25	0.15	50	ND
389.85	0.16	0.16	0.12	56	0.07
401.50	0.66	0.39	0.18	41	0.12
409.55	0.33	0.54	0.21	33	0.14
418.70	0.59	0.93	0.58	25	0.12
426.40	0.78	0.81	0.08	29	ND
441.70	ND	0.04	0.04	34	ND
450.00	0.20	0.23	2.00	80	ND
458.70	0.61	0.61	0.12	69	0.11
491.60	0.12	0.18	0.08	43	0.02
501.00	0.42	0.48	0.13	62	ND
511.50	0.04	0.05	0.04	49	ND
519.10	0.32	0.37	0.09	42	ND
531.50	0.06	0.10	0.09	47	0.05
537.40	0.09	0.31	0.17	25	ND
550.10	0.36	0.54	0.14	23	ND
570.85	0.67	2.03	0.21	20	0.15
580.70	0.04	0.23	0.07	16	0.15

Depth	Freons Freon 113 Value	Q	DF	Freon 123 Value	Q	DF	Freon 123A Value	Q	DF
75.00	1	U	1	1	U	1	1	U	1
85.00	1	U	1	1	U	1	1	U	1
98.00	1	U	1	1	U	1	1	U	1
105.00	1	U	1	1	U	1	1	U	1
114.85	1	U	1	1	U	1	1	U	1
125.00	1	U	1	1	U	1	1	U	1
135.00	1	U	1	1	U	1	1	U	1
157.85	1	U	1	1	U	1	1	U	1
165.00	1	U	1	1	U	1	1	U	1
175.00	1	U	1	1	U	1	1	U	1
185.00	1	U	1	1	U	1	1	U	1
195.00	1	U	1	1	U	1	1	U	1
204.15	1	U	1	1	U	1	1	U	1
215.00	1	U	1	1	U	1	1	U	1
223.80	1	U	1	1	U	1	1	U	1
233.38	1	U	1	1	U	1	1	U	1
241.50	1	U	1	1	U	1	1	U	1
252.15	1	U	1	1	U	1	1	U	1
259.60	1	U	1	1	U	1	1	U	1
286.50	1	U	1	1	U	1	1	U	1
294.35	1	U	1	1	U	1	1	U	1
322.45	1	U	1	1	U	1	1	U	1
331.10	1	U	1	1	U	1	1	U	1
340.00	1	U	1	1	U	1	1	U	1
350.00	1	U	1	1	U	1	1	U	1
361.55	1	U	1	1	U	1	1	U	1
370.00	1	U	1	1	U	1	1	U	1
380.00	1	U	1	1	U	1	1	U	1
389.85	1	U	1	1	U	1	1	U	1
401.50	1	U	1	1	U	1	1	U	1
409.55	1	U	1	1	U	1	1	U	1
418.70	1	U	1	1	U	1	1	U	1
426.40	3		1	1	U	1	1	U	1
441.70	1		1	1	U	1	1	U	1
450.00	11		1	1	U	1	1	U	1
458.70	1		1	1	U	1	1	U	1
491.60	1		1	1	U	1	1	U	1
501.00	2		1	1	U	1	1	U	1
511.50	1		1	1	U	1	1	U	1
519.10	5		1	1	U	1	1	U	1
531.50	2		1	1	U	1	1	U	1
537.40	1	U	1	1	U	1	1	U	1
550.10	1	U	1	1	U	1	1	U	1
570.85	1		1	1	U	1	1	U	1
580.70	1	U	1	1	U	1	1	U	1

Depth	VOC DATA, ug/L 1,1-Dichloroethene Value	Q	DF	1,1-Dichloroethane Value	Q	DF	1,1,1-Trichloroethane Value	Q	DF	1,1,2-Tetrachloroethan Value	Q	DF	Carbon Tetrachloride Value	Q	DF
75.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
85.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
98.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
105.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
114.9	1	U	1	1	U	1	1		1	1	U	1	1	U	1
125.0	1	U	1	1	U	1	1		1	1	U	1	1	U	1
135.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
157.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
165.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
175.0	1	U	1	2		1	1	U	1	1	U	1	1	U	1
185.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
195.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
204.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
215.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
223.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
233.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
241.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
252.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
259.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
286.5	1	U	1	1		1	1	U	1	1	U	1	1	U	1
294.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
322.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
331.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
340.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
350.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
361.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
370.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
380.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
389.9	1	U	1	1	U	1	1		1	1	U	1	2		1
401.5	3		1	1	U	1	2		1	1	U	1	5		1
409.6	3		1	1	U	1	2		1	1	U	1	5		1
418.7	3		1	1	U	1	3		1	1	U	1	6		1
426.4	26		1	1	U	1	17		1	1	U	1	36		1
441.7	17		1	1	U	1	14		1	1	U	1	27		1
450.0	40		1	1	U	1	27		1	1	U	1	92		24
458.7	33		1	1	U	1	20		1	1	U	1	69		1
491.6	35		1	1	U	1	23		1	1	U	1	38		1
501.0	28		1	1	U	1	22		1	1	U	1	35		1
511.5	42		1	1	U	1	32		1	1	U	1	40		1
519.1	22		1	1	U	1	18		1	1	U	1	32		1
531.5	37		1	1	U	1	24		1	1	U	1	38		1
537.4	9		1	1	U	1	7		1	1	U	1	9		1
550.1	10		1	1	U	1	7		1	1	U	1	11		1
570.9	10		1	1	U	1	7		1	1	U	1	10		1
580.7	4		1	1	U	1	3		1	1	U	1	4		1

Depth	Benzene Value	Q	DF	1,2-Dichlorothane Value	Q	DF	Toluene Value	Q	DF	Chlorobenzene Value	Q	DF	Ethylbenzene Value	Q	DF
75.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
85.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
98.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
105.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
114.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
125.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
135.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
157.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
165.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
175.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
185.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
195.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
204.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
215.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
223.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
233.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
241.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
252.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
259.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
286.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
294.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
322.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
331.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
340.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
350.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
361.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
370.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
380.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
389.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
401.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
409.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
418.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
426.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
441.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
450.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
458.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
491.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
501.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
511.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
519.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
531.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
537.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
550.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
570.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
580.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1

Depth	m,p-Xylene Value	Q	DF	o-Xylene Value	Q	DF	1,3-Dichlorobenzene Value	Q	DF	1,4-Dichlorobenzene Value	Q	DF	1,2-Dichlorobenzene Value	Q	DF	%SS
75.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
85.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	123
98.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	122
105.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116
114.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	125
125.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	129
135.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
157.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	115
165.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
175.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
185.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
195.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	115
204.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	121
215.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	115
223.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
233.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
241.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	115
252.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
259.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	120
286.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
294.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
322.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
331.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
340.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	118
350.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
361.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
370.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
380.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
389.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116
401.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
409.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
418.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
426.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
441.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
450.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
458.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
491.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
501.0	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
511.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
519.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	113
531.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	109
537.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
550.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	112
570.9	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
580.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	125

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb
%SS = Surrogate Recovery
U = Undetected below the specified reporting limit.
J = Estimated value.
ND = Value below detection limit.
NS = Not Sampled

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Client: GTEOSI
Location: Hicksville, NY
Date Sampled: 11/12/2007-11/13/2007
Date Analyzed: 11/12/2007-11/13/2007

Matrix: Water

HOLE ID = MWP	VOC DATA, ug/L															
	Vinyl Chloride			t-Dichloroethene			c-Dichloroethene			Trichloroethene			Tetrachloroethene			% SS
	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
MWP-114-170	6		1	1	U	1	140		1	440		1	7		1	111
MWP-110-355	1	U	1	1	U	1	19		1	240		1	5		1	104
MWP-110-440	1	U	1	1	U	1	11		1	23		1	500		1	110
MWP-114-290	1	U	1	1	U	1	17		1	50		1	1		1	104

INORGANIC DATA, mg/L				
Fe^{+2}	Fe, Total	Ammonia	Chloride	Chlorine, Total
0.06	0.17	0.21	35	NA
0.34	0.87	0.23	27	0.09
ND	0.04	0.07	17	ND
0.59	0.69	0.21	29	ND

Freons								
Freon 113			Freon 123			Freon 123A		
Value	Q	DF	Value	Q	DF	Value	Q	DF
1	U	1	1	U	1	1	U	1
6		1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1
1	U	1	1	U	1	1	U	1

	VOC DATA, ug/L																				
	1,1-Dichloroethene			1,1-Dichloroethane			1,1,1-Trichloroethane			1,1,2-Tetrachloroethan			Carbon Tetrachloride			Benzene			1,2-Dichlorothane		
	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF
MWP-114-170	2		1	6		1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
MWP-110-355	8		1	1		1	6		1	1	U	1	4		1	1	U	1	1	U	1
MWP-110-440	1	U	1	1	U	1	1	U	1	1		1	3		1	1	U	1	1	U	1
MWP-114-290	6		1	22		1	5		1	1	U	1	1	U	1	1	U	1	1	U	1

	VOC DATA, ug/L																								
	Toluene			Chlorobenzene			Ethylbenzene			m,p-Xylene			o-Xylene			1,3-Dichlorobenzene			1,4-Dichlorobenzene			1,2-Dichlorobenzene			%SS
	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
MWP-114-170	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
MWP-110-355	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
MWP-110-440	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
MWP-114-290	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb
%SS = Surrogate Recovery
U = Undetected below the specified reporting limit.
J = Estimated value.
ND = Value below detection limit.
NS = Not Sampled

STL VOC Data - Groundwater Profile P-118 and Monitoring Wells MWP-110-355, MWP-110-440, MWP-114-170, and MWP-114-290
GTE Operations Support Incorporated
Former Sylvania Electric Products Incorporated Facility
Hicksville, NY

Chemical Name	Units	Sample ID / Depth (feet below ground surface)									
		P-118-361.55	P-118-389.85	P-118-426.40	P-118-450	P-118-531.5	P-118-537.4	MWP-110-355	MWP-110-440	MWP-114-170	MWP-114-290
1,1,1,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.4	1 U	1 U
1,1,1-Trichloroethane	ug/L	1 U	0.72 J	14	27	30	9.5	6.4	1 U	0.95 J	6.3
1,1,2,2-Tetrachloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	1 U	1 U	0.58 J	1.1	0.81 J	0.33 J	1.5	0.15 J	5.8	23
1,1-Dichloroethene	ug/L	1 U	0.74 J	22	39	15	7.3	9.4	0.23 J	2.3	6.4
1,2-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1 U	1 U	1 U	0.19 J	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	ug/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
2-Hexanone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	2 UJ	2 UJ	2 UJ	2 UJ	4.8 J	16 J	2 UJ	2 UJ	2 UJ	2 UJ
Benzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.18 J	0.14 J
Bromodichloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Carbon disulfide	ug/L	1 U	1 U	1 U	0.32 J	0.19 J	0.1 J	1 U	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1 UJ	1.6 J	30 J	72	41	12	4.7	2.7	1 U	1 U
Chlorobenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.34 J	0.34 J
Chloroethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroform	ug/L	1.4	0.21 J	2	3	1.1	0.55 J	1.4	0.75 J	0.49 J	0.61 J
Chloromethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	0.36 J	2 U	2 U	2 U
cis-1,2-Dichloroethene	ug/L	0.89 J	0.29 J	1.4	10	1.3	0.47 J	20	13	120	20
cis-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	ug/L	1 U	1 U	1 U	0.28 J	1 U	1 U	1 U	1 U	0.51 J	1 U
Styrene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	ug/L	4.2	3.7	62	130	260	100	4.5	420	6.7	1.8
Toluene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	0.88 J	0.31 J	0.25 J	0.18 J
trans-1,2-Dichloroethene	ug/L	1 U	1 U	1 U	0.17 J	1 U	1 U	1 U	1 U	0.61 J	1 U
trans-1,3-Dichloropropene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	ug/L	1 U	18	160	540	240	94	240	23	420	55
Vinyl chloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	0.16 J	1 U	6.5	0.89 J
Xylenes (total)	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:
U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Boring ID:

MALCOLM PIRNIE, INC.

P-118

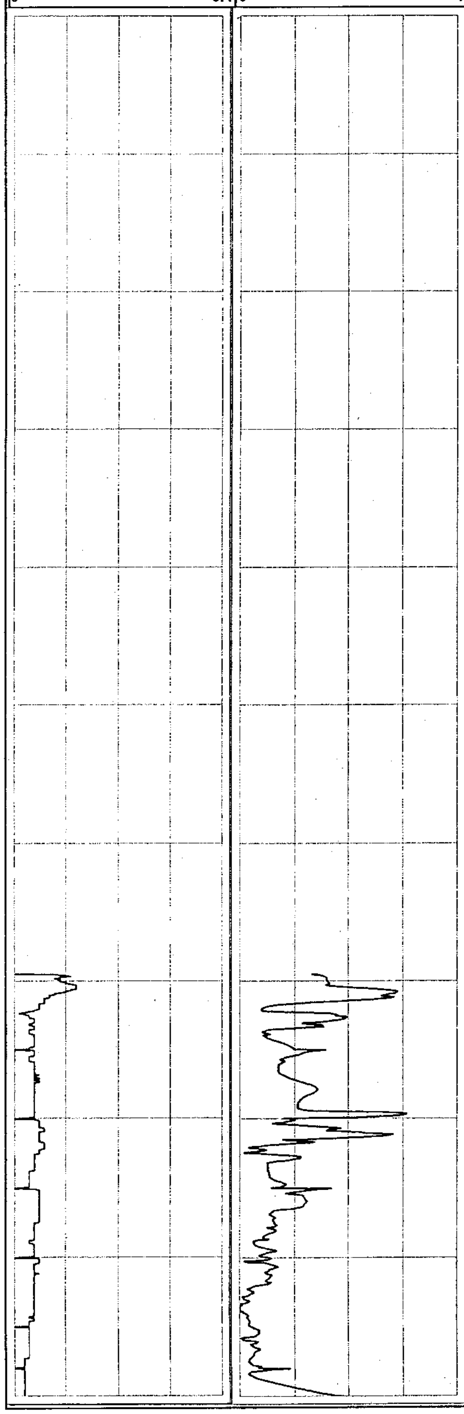
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	October 30, 2007
JOB NUMBER:	4563001	END DATE:	November 18, 2007
DRILLING FIRM:	SGS	LOCATION:	Wantagh State Parkway north of Stewart Ave.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 580.7 ft. Total depth of boring: 580 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.4 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
0	SAND (fine), trace Silt and Gravel (fine); dark brown, sub-round.	SP		Hollow stem augers advanced from 0 to 20 ft bgs
	SAND (fine) and GRAVEL (fine-coarse) to 1" diameter, yellow-brown, sub-round.	SW		
10				
20	SAND (fine-medium) and GRAVEL (fine) to 1/2" diameter, light brown, sub-round.	SW		Begin mud rotary drilling at 20 ft
30				
40				
50				
60	SAND (fine-medium); light brown.	SW		Begin profiling at 69.45 ft. Advance casing from ground surface to initial depth at 70' bgs
70	SAND (medium-coarse) with oxidized orange-white Silt interbeds; light brown.	SM		
80				
90	SAND (fine), trace white Silt interbeds; Light gray white.	SP		

Boring ID:

P-118

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	October 30, 2007
JOB NUMBER:	4563001	END DATE:	November 18, 2007
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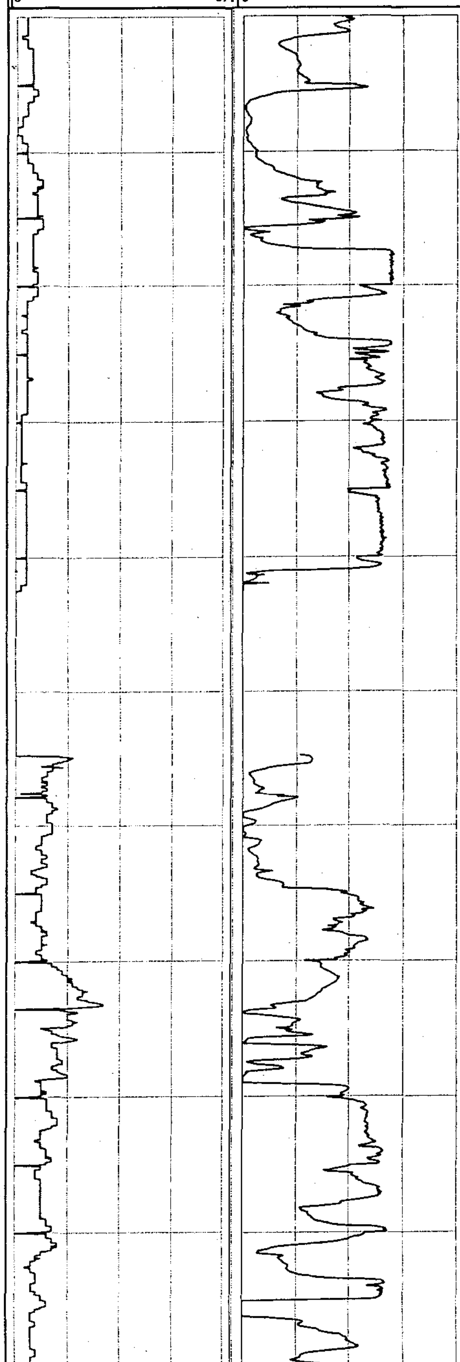

Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
100		SP		
110				
120				
130				
140	SILT and CLAY, trace Sand (fine); gray-white with black carbonaceous Clay.	ML-CL		Profiler refusal at 143' bgs, pulled rods and advanced casing from 70' bgs to 155'
150	SAND (fine) with interbedded Silt; gray.	SP		
160				
170				
180	SAND (fine), trace white Clay and Silt interbeds; light gray brown, micaceous.	SP		
190	SAND (fine); tan-brown, micaceous.	SP		

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

Boring ID: **P-118**

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	October 30, 2007
JOB NUMBER:	4563001	END DATE:	November 18, 2007
DRILLING FIRM:	SGS	LOCATION:	Wantagh State Parkway north of Stewart Ave.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
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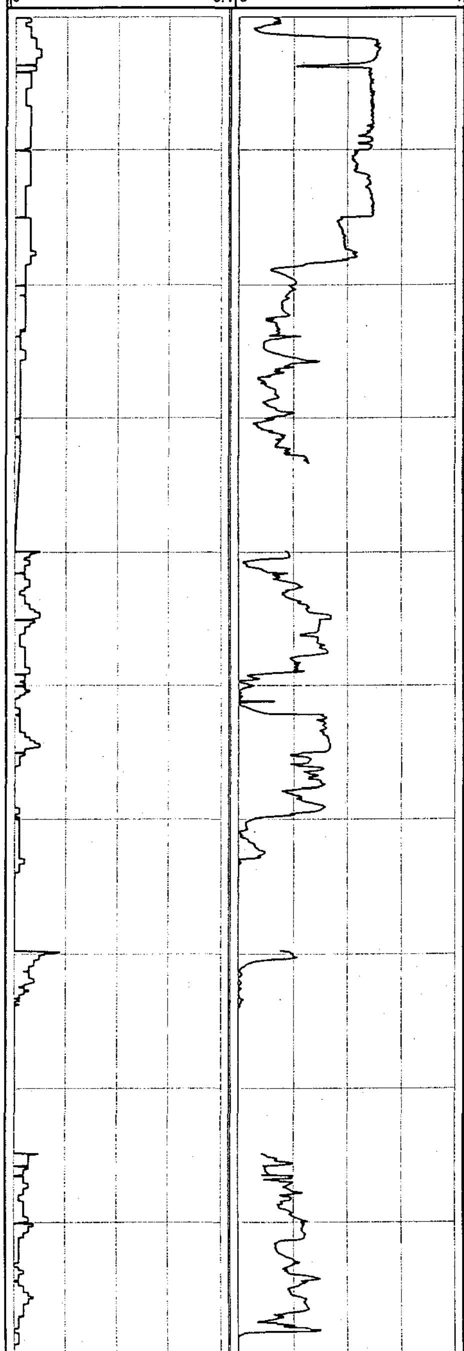

Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
200		SP		
210	SAND (fine-medium); light brown, micaceous.	SW		
230	SAND (fine-coarse); light brown, micaceous.	SW		Profiler refusal at 233' bgs, pulled rods and advanced casing from 155' bgs to 240'
240	SAND (fine); light brown.	SP		
250	SAND (fine-medium); light brown.	SW		
260	SAND (fine), trace-little white Silty Clay interbeds < 1" thick; light brown.			
	SILT and CLAY, with stiff white Clay interbeds, trace Sand; white gray.	ML-CL		Profiler refusal at 264' bgs, pulled rods and advanced casing from 240' bgs to 270' Profiler refusal at 274' bgs, pulled rods and advanced casing from 270' bgs to 285'
280	SAND (fine), little Silt; light gray white.	SP		
	CLAY with trace carbonaceous material and Silt; light gray-white.	CL		

Boring ID:

MALCOLM PIRNIE, INC.

P-118

17-17 Route 208 North Fair Lawn, NJ 07401

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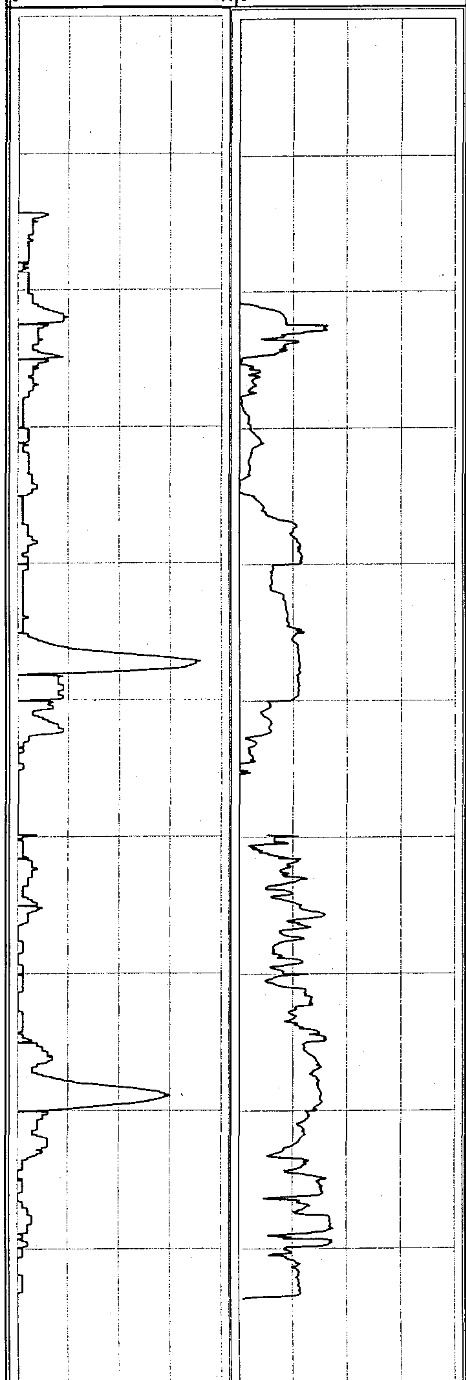


Depth (ft bgs)	Description	USCS Symbol	REMARKS
300		CL	Profiler refusal at 299' bgs, pulled rods and advanced casing from 285' bgs to 320'
310	SILT and SAND (fine-medium); gray-white.	SM	
	SAND (medium); gray-white, angular.	SP	
320			
330			
340	SAND (fine-coarse), trace Silt; tan-white, angular, micaceous.	SW	
350			Profiler refusal at 355' bgs, pulled rods and advanced casing from 320' bgs to 360'
360	SAND (fine); light brown-gray, micaceous.	SP	
370	SAND (medium-coarse), trace Clay and Silt; Light gray-white, angular, micaceous.	SW	
380			
390			Profiler refusal at 394' bgs, pulled rods and advanced casing from 360' bgs to 400'

MALCOLM PIRNIE, INC.
17-17 Route 208 North Fair Lawn, NJ 07401

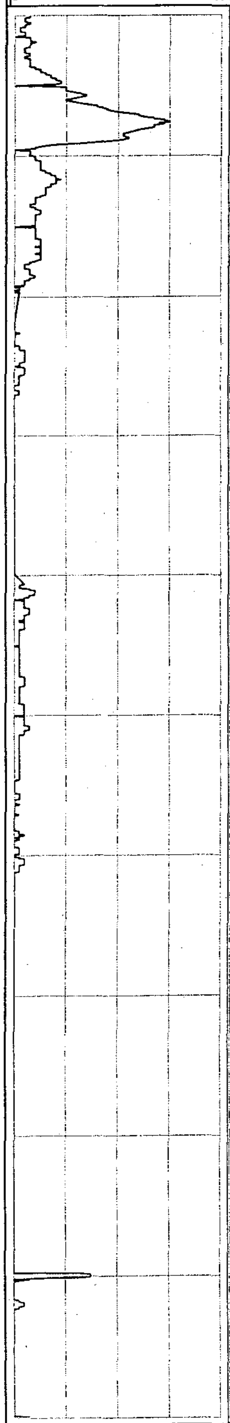
Boring ID: **P-118**

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	October 30, 2007
JOB NUMBER:	4563001	END DATE:	November 18, 2007
DRILLING FIRM:	SGS	LOCATION:	Wantagh State Parkway north of Stewart Ave.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

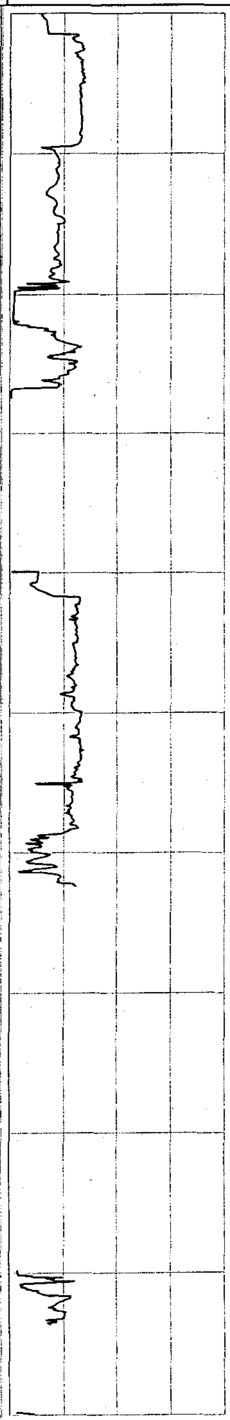
Total depth of Profile: 580.7 ft. Total depth of boring: 580 ft.

GEOLOGIC INFORMATION

Penetration Rate (ft/min) 0 – 0.4



Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
400	SAND (fine-medium); light gray, micaceous.	SW		
	SILT and CLAY; gray-white.	ML-CL		Profiler refusal at 427 bgs, pulled rods and advance casing from 400' bgs to 440' bgs.
	SAND (fine); light tan-brown.	SP		
450	SAND (medium-coarse), trace fine Gravel; tan-white, angular.	SW		
460	SAND (fine-medium), trace-little white Silt; tan.	SW		Profiler refusal at 462' bgs, pulled rods and advanced casing from 440' bgs to 490'
	CLAY and Silt with interbedded white Silt, trace Sand (fine); dark gray.	CL-ML		
	SAND (fine-coarse) with Gravel (fine), trace Silt; light brown-white, sub-round.	SW		silt appears oxidized Profiler refusal at 494' bgs, pulled rods and advanced casing from 490' bgs to 500'

Depth markers: 400, 410, 420, 430, 440, 450, 460, 470, 480, 490

Boring ID:

MALCOLM PIRNIE, INC.

P-118

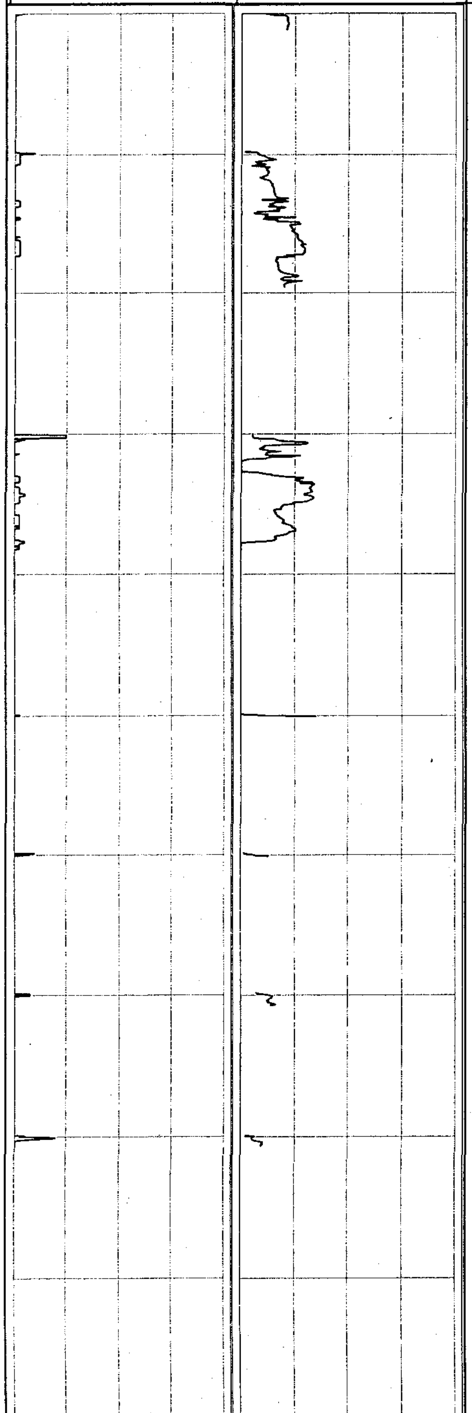
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	October 30, 2007
JOB NUMBER:	4563001	END DATE:	November 18, 2007
DRILLING FIRM:	SGS	LOCATION:	Wantagh State Parkway north of Stewart Ave.
DRILLING METHOD:	Mud Rotary		
DRILLER:	Tom Lynch	DATUM:	Land Surface
HELPER:	Julio Cancel	LOGGED BY:	J. Hilton

Total depth of Profile: 580.7 ft. Total depth of boring: 580 ft.

GEOLOGIC INFORMATION

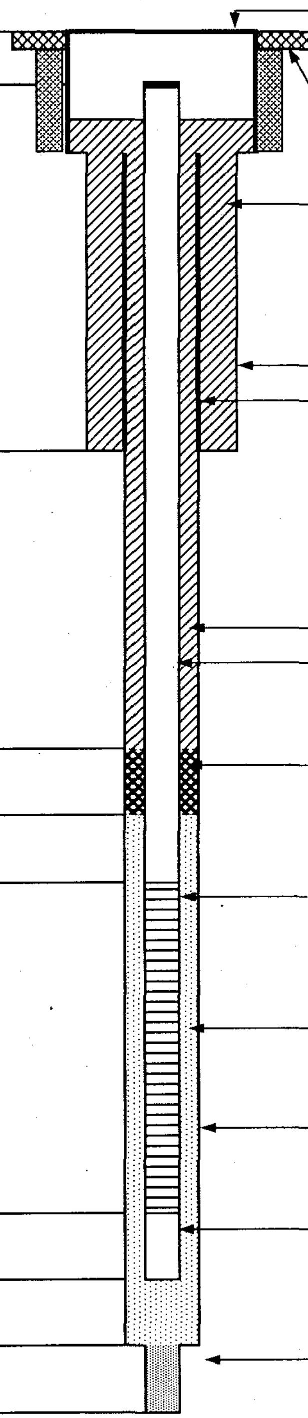
Penetration Rate (ft/min) 0 – 0.4 | Index of Hyd. Conductivity 0 – 4



Depth (ft bgs)	Description	USCS Symbol	Stratigraphic Column	REMARKS
500	SAND (medium-coarse), trace-little Garvel and white Silt interbeds; gray-white, sub-round.	SW		Profiler refusal at 501' bgs, pulled rods and advanced casing from 500' bgs to 510'
510				
520				Profiler refusal at 519' bgs, pulled rods and advanced casing from 510' bgs to 530'
530	SAND (medium-coarse), little-some Silt and gray Clay interbeds < 2' thick; white-gray.	SW		Artesian Conditions noted in sand unit profiled at 530-537' bgs; flow at 2-3 gpm.
540				Profiler refusal at 538' bgs, pulled rods and advanced casing from 530' bgs to 550'
	SAND (medium-coarse) with white Silt interbeds; gray-white.	SM		
550	SAND (coarse) and GRAVEL (fine); white gray, aub-angular.	SW		Profiler refusal at 550' bgs, pulled rods and advanced casing from 550' bgs to 560'
560				Trip out profiling rods from 560' bgs. Not able to collect sample at 560' interval due to parameters indicating drilling mud or additives in purge water. pull rods and advanced casing from 560' bgs to 570'
570	SAND (medium-coarse), little interbedded white/pink Silt < 1' thick from approximately 575-578' bgs; white-gray.	SW		Profiler refusal at 571' bgs, pulled rods and advanced casing from 570' bgs to 580'
				End of boring at 580 ft End of profile at 580.7 ft
580				
590				

MALCOLM PIRNIE, Inc.		FLUSHMOUNT OVERBURDEN Multicased Monitoring Well MWP 110-355
Project: Profiling/Well Installation Hicksville, NY	**Number:** 4563-001	
Client: GTEOSI	**Date:** 8/13/2007	**Subcontractor:** SGS Drilling
Drilling Method: Mud rotary		**Measuring Point**
Development Method: Submersible Pump		**Type:** Top Of Riser
Development Dates: 9/18/2007		**Elevation (ft):** 0.0

Item	Depth, below Measuring Point (ft)	Elevation (ft)
Grade	0.0	0
Riser Pipe	0.5	-0.5
Base of Casing	78.5	-78.5
Top of Seal.	330	-330
Top of Filter Pack.	340.2	-340.2
Top of Screen.	345	-345
Base of Screen.	355	-355
End Cap	357	-357
Drilled Depth	362	-362
Total Depth	362	-362

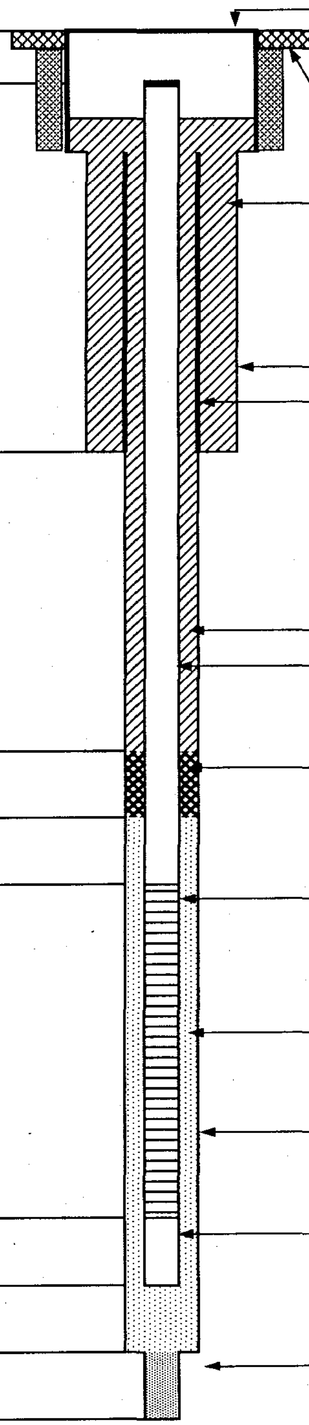


Description	
Flushmount Diameter:	9 (in.)
Surface Seal Type:	Concrete
Grout Type:	Cement-bentonite
Borehole Diameter:	12 (in.)
Casing Type:	Sch 40 PVC
Casing ID:	8 (in.)
Grout Type:	Cement-bentonite
Riser Pipe Type:	Sch 80 PVC
Riser Pipe ID:	4 (in.)
Type of Seal:	Bentonite Slurry
Screen Type:	Sch 80 PVC
Screen ID:	4 (in.)
Screen Slot Size:	0.02 (in.)
Filter/Sand Pack Type:	Graded #1 silica sand
Borehole Diameter:	7 7/8 (in.)
Sump:	Sch 80 PVC
Fallback/Backfill:	Not Applicable

Notes:

MALCOLM PIRNIE, Inc.		FLUSHMOUNT OVERBURDEN Multicased Monitoring Well MWP 110-440
Project: Profiling/Well Installation Hicksville, NY	**Number:** 4563-001	
Client: GTEOSI	**Date:** 8/24/2007	**Subcontractor:** SGS Drilling
Drilling Method: Mud rotary		**Measuring Point**
Development Method: Submersible Pump		**Type:** Top Of Riser
Development Dates: 9/19/2007-9/20/2007		**Elevation (ft):** 0.0

Item	Depth, below Measuring Point (ft)	Elevation (ft)
Grade	0.0	0
Riser Pipe	0.5	-0.5
Base of Casing	78.4	-78.4
Top of Seal.	415	-415
Top of Filter Pack.	424	-424
Top of Screen.	430	-430
Base of Screen.	440	-440
End Cap	444	-444
Drilled Depth	445	-445
Total Depth	445	-445

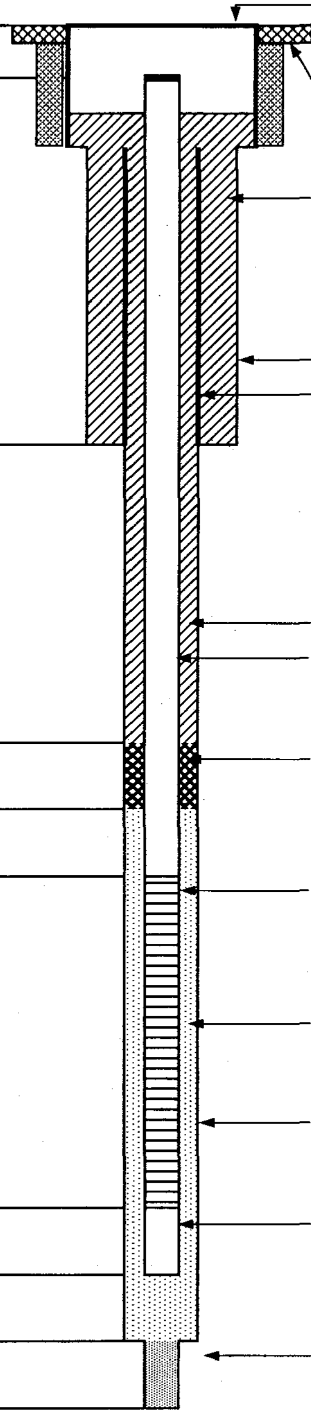


Description	
Flushmount Diameter:	9 (in.)
Surface Seal Type:	Concrete
Grout Type:	Cement-bentonite
Borehole Diameter:	12 (in.)
Casing Type:	Sch 40 PVC
Casing ID:	8 (in.)
Grout Type:	Cement-bentonite
Riser Pipe Type:	Sch 80 PVC
Riser Pipe ID:	4 (in.)
Type of Seal:	Bentonite Slurry
Screen Type:	Sch 80 PVC
Screen ID:	4 (in.)
Screen Slot Size:	0.02 (in.)
Filter/Sand Pack Type:	Graded #1 silica sand
Borehole Diameter:	7 7/8 (in.)
Sump:	Sch 80 PVC
Fallback/Backfill:	Native sand

Notes:

MALCOLM PIRNIE, Inc.		FLUSHMOUNT OVERBURDEN Multicased Monitoring Well MWP 114-290
Project: Profiling/Well Installation Hicksville, NY	**Number:** 4563-001	
Client: GTEOSI	**Date:** 9/10/2007	**Subcontractor:** SGS Drilling
Drilling Method: Mud rotary		**Measuring Point**
Development Method: Submersible Pump		**Type:** Top Of Riser
Development Dates: 9/25/2007		**Elevation (ft):** 0.0

Item	Depth, below Measuring Point (ft)	Elevation (ft)
Grade	0.0	0
Riser Pipe	0.5	-0.5
Base of Casing	78.5	-78.5
Top of Seal.	265	-265
Top of Filter Pack.	277.6	-277.6
Top of Screen.	280	-280
Base of Screen.	290	-290
End Cap	292	-292
Drilled Depth	294	-294
Total Depth	294	-294

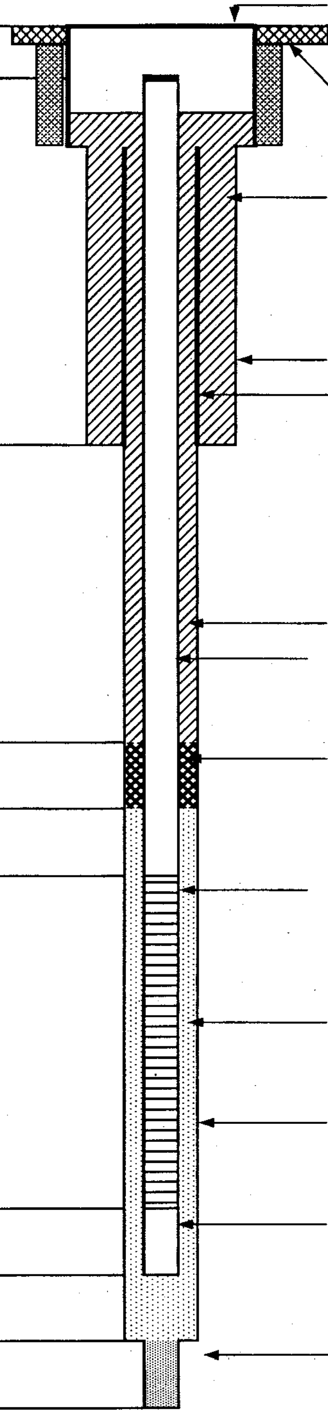


Description	
Flushmount Diameter:	9 (in.)
Surface Seal Type:	Concrete
Grout Type:	Cement-bentonite
Borehole Diameter:	13 (in.)
Casing Type:	Sch 40 PVC
Casing ID:	8 (in.)
Grout Type:	Cement-bentonite
Riser Pipe Type:	Sch 80 PVC
Riser Pipe ID:	4 (in.)
Type of Seal:	Bentonite Slurry
Screen Type:	Sch 80 PVC
Screen ID:	4 (in.)
Screen Slot Size:	0.02 (in.)
Filter/Sand Pack Type:	Graded #1 silica sand
Borehole Diameter:	7 7/8 (in.)
Sump:	Sch 80 PVC
Fallback/Backfill:	Not Applicable

Notes:

MALCOLM PIRNIE, Inc.		FLUSHMOUNT OVERBURDEN Multicased Monitoring Well MWP 114-170
Project: Profiling/Well Installation Hicksville, NY	**Number:** 4563-001	
Client: GTEOSI	**Date:** 10/12/2007	**Subcontractor:** SGS Drilling
Drilling Method: Mud rotary		**Measuring Point**
Development Method: Submersible Pump		**Type:** Top Of Riser
Development Dates: 10/29/2007		**Elevation (ft):** 0.0

Item	Depth, below Measuring Point (ft)	Elevation (ft)
Grade	0.0	0
Riser Pipe	0.5	-0.5
Base of Casing	76	-76
Top of Seal.	145	-145
Top of Filter Pack.	157	-157
Top of Screen.	160	-160
Base of Screen.	170	-170
End Cap	172	-172
Drilled Depth	174	-174
Total Depth	174	-174



Description	
Flushmount Diameter:	9 (in.)
Surface Seal Type:	Concrete
Grout Type:	Cement-bentonite
Borehole Diameter:	12 (in.)
Casing Type:	Sch 40 PVC
Casing ID:	8 (in.)
Grout Type:	Cement-bentonite
Riser Pipe Type:	Sch 80 PVC
Riser Pipe ID:	4 (in.)
Type of Seal:	Bentonite Slurry
Screen Type:	Sch 80 PVC
Screen ID:	4 (in.)
Screen Slot Size:	0.02 (in.)
Filter/Sand Pack Type:	Graded #1 silica sand
Borehole Diameter:	7 7/8 (in.)
Sump:	Sch 80 PVC
Fallback/Backfill:	Not Applicable

Notes:

MALCOLM PIRNIE 17-17 Rt 208 NORTH, FAIRLAWN, NEW JERSEY 07410

GROUNDWATER MONITORING WELL SAMPLE COLLECTION LOGS

PROJECT NUMBER: 4563001
DATE: 11/12/2007
PROJECT NAME: GTEOSI
SAMPLERS: Jeff DeKoskie, Chris Goldsmith
SITE LOCATION: Hicksville, NY
SITE CONTACT:
WEATHER: Cloudy, 45°F

WELL IDENTIFICATION NUMBER: MWP-114-170

PERMIT:

WELL HEADSPACE READING: 2.9
PID MODEL/LAMP: mini rae 2000
DEPTH TO WATER (Before Purging): 47.59 FEET FROM TOP OF CASING
WELL DEPTH: 171.85 FEET FROM TOP OF CASING
HEIGHT OF WATER IN WELL: 124.26 FEET
WATER IN ONE WELL VOLUME: 81.11693 GALLONS
PURGE TIME (start/finish): 12:22 / 15:10
PURGE RATE: 300 ml/min
WELL EVACUATION DEVICE: Marschalk bladder pump
SAMPLING TIME (start/finish): 15:15 / 15:20
SAMPLE RATE: 250 ml/min
SAMPLE COLLECTION DEVICE: Marschalk bladder pump
SAMPLE APPEARANCE: Brown to clear

FIELD PARAMETERS	initial	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
time (00:00)	12:35	12:45	12:50	12:55	13:00	13:05	13:10	13:15	13:20	13:25
pH (SU)	5.00	5.39	5.99	6.02	6.01	6.07	6.08	6.11	6.23	6.44
specific conductivity (mS)	0.356	0.358	0.405	0.415	0.415	0.417	0.422	0.424	0.433	0.437
turbidity (NTU's)	2	41	86	293	330	>1000	>1000	>1000	>1000	>999
dissolved oxygen (mg/l)	2.16	1.71	1.84	2.00	2.05	0.99	0.92	0.96	1.00	1.00
temperature (degrees C)	12.5	13.1	13.5	13.2	13.3	13.8	14.1	14.2	14.0	14.5
redox potential (mv)	200.0	192.2	184.3	183.7	184.0	186.2	185.3	185.0	183.7	173.4
depth to water (feet)	47.68	47.67	47.62	47.62	47.62	47.62	47.63	47.63	47.63	47.66
volume purged (L)	0.5	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5

SAMPLE ANALYSIS INFORMATION

ANALYSIS REQUIRED:

LABORATORY:
CONTACT:

Casing Diameter/Volume conversions (inches)	(gallons per foot)
2.0	0.1632
4.0	**0.6528**
6.0	1.4687
8.0	2.6115

NOTES: 4-inch well
12:35 Stop pump to adjust flow thru cell and clean out
12:44 re-start pump

MALCOLM PIRNIE 17-17 Rt 208 NORTH, FAIRLAWN, NEW JERSEY 07410

GROUNDWATER MONITORING WELL SAMPLE COLLECTION LOGS

PROJECT NUMBER: 4563001
DATE: 11/12/2007
PROJECT NAME: GTEOSI
SAMPLERS: Jeff DeKoskie, Chris Goldsmith
SITE LOCATION: Hicksville, NY
SITE CONTACT:
WEATHER: Cloudy, 45°F

WELL IDENTIFICATION NUMBER: MWP-114-170

PERMIT:

WELL HEADSPACE READING: 2.9
PID MODEL/LAMP: mini rae 2000
DEPTH TO WATER (Before Purging): 47.59 FEET FROM TOP OF CASING
WELL DEPTH: 171.85 FEET FROM TOP OF CASING
HEIGHT OF WATER IN WELL: 124.26 FEET
WATER IN ONE WELL VOLUME: 81.11693 GALLONS
PURGE TIME (start/finish): 12:22 / 15:10
PURGE RATE: 300 ml/min
WELL EVACUATION DEVICE: Marschalk bladder pump
SAMPLING TIME (start/finish): 15:15 / 15:20
SAMPLE RATE: 250 ml/min
SAMPLE COLLECTION DEVICE: Marschalk bladder pump
SAMPLE APPEARANCE: Brownish color

FIELD PARAMETERS	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th
time (00:00)	13:30	13:35	13:40	13:45	13:50	13:55	14:00	14:05	14:45	14:50
pH (SU)	6.50	6.77	6.96	7.07	7.15	7.30	7.46	7.69	6.21	6.19
specific conductivity (mS)	0.427	0.433	0.431	0.415	0.402	0.395	0.390	0.387	0.389	0.390
turbidity (NTU's)	>999	>999	>999	>999	>999	>999	>999	>999	155	75
dissolved oxygen (mg/l)	0.88	0.91	0.94	1.09	0.94	1.15	1.17	1.04	1.40	1.36
temperature (degrees C)	14.6	14.0	13.3	13.0	13.2	13.2	13.2	13.2	13.2	13.2
redox potential (mv)	170.7	170	169.6	169.4	168.9	168.8	165.1	147.5	211	209
depth to water (feet)	47.64	47.64	47.64	47.63	47.63	47.63	47.63	47.63	47.65	47.65
volume purged (L)	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5

SAMPLE ANALYSIS INFORMATION

ANALYSIS REQUIRED: VOC

LABORATORY: STL Edison
CONTACT:

Casing Diameter/Volume conversions (inches)	(gallons per foot)
2.0	0.1632
4.0	**0.6528**
6.0	1.4687
8.0	2.6115

NOTES: 4-inch well
14:05 Stop pump, clean out FTC, raise pump 2 ft
14:40 Re-start pump

MALCOLM PIRNIE

17-17 Rt 208 NORTH, FAIRLAWN, NEW JERSEY 07410

GROUNDWATER MONITORING WELL SAMPLE COLLECTION LOGS

PROJECT NUMBER: 4563001
DATE: 11/12/2007
PROJECT NAME: GTEOSI
SAMPLERS: Jeff DeKoskie
SITE LOCATION: Hicksville, NY
Chris Goldsmith
SITE CONTACT:
WEATHER: Cloudy, 45°F

WELL IDENTIFICATION NUMBER: MWP-114-170

PERMIT:

WELL HEADSPACE READING: 2.9
PID MODEL/LAMP: mini rae 2000
DEPTH TO WATER (Before Purging): 47.59 FEET FROM TOP OF CASING
WELL DEPTH: 171.85 FEET FROM TOP OF CASING
HEIGHT OF WATER IN WELL: 124.26 FEET
WATER IN ONE WELL VOLUME: 81.11693 GALLONS
PURGE TIME (start/finish): 12:22 / 15:10
PURGE RATE: 300 ml/min
WELL EVACUATION DEVICE: Marschalk bladder pump
SAMPLING TIME (start/finish): 15:15 / 15:20
SAMPLE RATE: 250 ml/min
SAMPLE COLLECTION DEVICE: Marschalk bladder pump
SAMPLE APPEARANCE: Brown to clear

FIELD PARAMETERS	20th	21th	22nd	23rd						
time (00:00)	14:55	15:00	15:05	15:10						
pH (SU)	6.19	6.16	6.03	6.02						
specific conductivity (mS)	0.402	0.403	0.401	0.401						
turbidity (NTU's)	60	58	55	57						
dissolved oxygen (mg/l)	1.39	1.32	0.96	0.97						
temperature (degrees C)	11.9	11.8	12.1	12.1						
redox potential (mv)	224	221	223	223						
depth to water (feet)	47.64	47.64	47.64	47.64						
volume purged (L)	30.0	31.5	33.0	34.5						

SAMPLE ANALYSIS INFORMATION

ANALYSIS REQUIRED: VOC

LABORATORY: STL Edison
CONTACT:

Casing Diameter/Volume conversions (inches)	(gallons per foot)
2.0	0.1632
4.0	**0.6528**
6.0	1.4687
8.0	2.6115

NOTES: 4-inch well

MALCOLM PIRNIE 17-17 Rt 208 NORTH, FAIRLAWN, NEW JERSEY 07410

GROUNDWATER MONITORING WELL SAMPLE COLLECTION LOGS

PROJECT NUMBER: 4563001
DATE: 11/13/2007
PROJECT NAME: GTEOSI
SAMPLERS: Jeff DeKoskie, Chris Goldsmith
SITE LOCATION: Hicksville, NY
SITE CONTACT:
WEATHER: Ptly cloudy, 55°F

WELL IDENTIFICATION NUMBER: MWP-110-440

PERMIT:

WELL HEADSPACE READING: 1.0
PID MODEL/LAMP: mini rae 2000
DEPTH TO WATER (Before Purging): 47.34 FEET FROM TOP OF CASING
WELL DEPTH: 444.31 FEET FROM TOP OF CASING
HEIGHT OF WATER IN WELL: 396.97 FEET
WATER IN ONE WELL VOLUME: 259.142 GALLONS
PURGE TIME (start/finish): 12:00 / 13:10
PURGE RATE: 300 ml/min
WELL EVACUATION DEVICE: Marschalk bladder pump
SAMPLING TIME (start/finish): 13:20 / 13:25
SAMPLE RATE: 250 ml/min
SAMPLE COLLECTION DEVICE: Marschalk bladder pump
SAMPLE APPEARANCE:

FIELD PARAMETERS	initial	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
time (00:00)	12:10	12:15	12:20	12:25	12:30	12:35	12:40	12:45	12:50	12:55
pH (SU)	5.56	5.35	5.27	5.26	5.25	5.22	5.16	5.12	5.09	5.05
specific conductivity (mS)	0.301	0.303	0.303	0.303	0.303	0.304	0.305	0.305	0.306	0.307
turbidity (NTU's)	2	1	1	2	5	6	6	7	7	9
dissolved oxygen (mg/l)	2.83	2.15	2.12	2.07	1.92	1.76	1.68	1.71	1.70	1.70
temperature (degrees C)	14.3	14.2	14.2	14.2	14.2	14.0	14.0	14.0	14.1	14.0
redox potential (mv)	210	237	247	249	249	245	247	243	237	232
depth to water (feet)	47.51	47.52	47.52	47.52	47.52	47.52	47.52	47.51	47.51	47.51
volume purged (L)	0.5	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5

SAMPLE ANALYSIS INFORMATION

ANALYSIS REQUIRED: VOC

LABORATORY: STL Edison
CONTACT:

Casing Diameter/Volume conversions

(inches)	(gallons per foot)
2.0	0.1632
4.0	**0.6528**
6.0	1.4687
8.0	2.6115

NOTES: 4-inch well

MALCOLM PIRNIE

17-17 Rt 208 NORTH, FAIRLAWN, NEW JERSEY 07410

GROUNDWATER MONITORING WELL SAMPLE COLLECTION LOGS

PROJECT NUMBER:	4563001	DATE:	11/13/2007
PROJECT NAME:	GTEOSI	SAMPLERS:	Jeff DeKoskie
SITE LOCATION:	Hicksville, NY		Chris Goldsmith
SITE CONTACT:		WEATHER:	Ptly cloudy, 55°F

WELL IDENTIFICATION NUMBER: MWP-110-440 **PERMIT:**

WELL HEADSPACE READING: 1.0 PID MODEL/LAMP: mini rae 2000

DEPTH TO WATER (Before Purging): 47.34 FEET FROM TOP OF CASING

WELL DEPTH: 444.31 FEET FROM TOP OF CASING

HEIGHT OF WATER IN WELL: 396.97 FEET

WATER IN ONE WELL VOLUME: 259.142 GALLONS

PURGE TIME (start/finish): 12:00 / 13:10 PURGE RATE: 300 ml/min

WELL EVACUATION DEVICE: Marschalk bladder pump

SAMPLING TIME (start/finish): 13:20 / 13:25 SAMPLE RATE: 250 ml/min

SAMPLE COLLECTION DEVICE: Marschalk bladder pump

SAMPLE APPEARANCE:

FIELD PARAMETERS	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th
time (00:00)	13:00	13:05	13:10							
pH (SU)	5.05	5.03	5.02							
specific conductivity (mS)	0.307	0.307	0.307							
turbidity (NTU's)	10	8	10							
dissolved oxygen (mg/l)	1.74	1.77	1.78							
temperature (degrees C)	14.1	14.1	14.0							
redox potential (mv)	232	232	232							
depth to water (feet)	47.51	47.51	47.51							
volume purged (L)	15.0	16.5	18.0							

SAMPLE ANALYSIS INFORMATION

ANALYSIS REQUIRED: VOC

LABORATORY: STL Edison

CONTACT:

Casing Diameter/Volume conversions (inches)	(gallons per foot)
2.0	0.1632
4.0	**0.6528**
6.0	1.4687
8.0	2.6115

NOTES: 4-inch well

MALCOLM PIRNIE 17-17 Rt 208 NORTH, FAIRLAWN, NEW JERSEY 07410

GROUNDWATER MONITORING WELL SAMPLE COLLECTION LOGS

PROJECT NUMBER: 4563001
DATE: 11/13/2007
PROJECT NAME: GTEOSI
SAMPLERS: Jeff DeKoskie, Chris Goldsmith
SITE LOCATION: Hicksville, NY
SITE CONTACT:
WEATHER: Sunny, mild, 60°F

WELL IDENTIFICATION NUMBER: MWP-110-355

PERMIT:

WELL HEADSPACE READING: 2.5
PID MODEL/LAMP: mini rae 2000
DEPTH TO WATER (Before Purging): 47.15 FEET FROM TOP OF CASING
WELL DEPTH: 354.54 FEET FROM TOP OF CASING
HEIGHT OF WATER IN WELL: 307.39 FEET
WATER IN ONE WELL VOLUME: 200.6642 GALLONS
PURGE TIME (start/finish): 15:00 / 16:25
PURGE RATE: 300 ml/min
WELL EVACUATION DEVICE: Marschalk bladder pump
SAMPLING TIME (start/finish): 16:30 / 16:35
SAMPLE RATE: 250 ml/min
SAMPLE COLLECTION DEVICE: Marschalk bladder pump
SAMPLE APPEARANCE: Clear

FIELD PARAMETERS	initial	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
time (00:00)	15:05	15:10	15:15	15:20	15:25	15:30	15:35	15:40	15:45	15:50
pH (SU)	5.32	5.54	5.65	5.66	5.63	5.54	5.36	5.34	5.35	5.36
specific conductivity (mS)	0.169	0.182	0.201	0.202	0.204	0.203	0.204	0.203	0.201	0.201
turbidity (NTU's)	85	88	70	69	71	75	55	41	37	41
dissolved oxygen (mg/l)	7.65	6.20	6.24	6.48	7.23	7.11	2.80	1.95	1.22	1.11
temperature (degrees C)	13.7	13.7	13.4	13.4	13.3	13.6	14.0	14.0	14.0	14.0
redox potential (mv)	292	310	314	315	306	306	278	256	205	180
depth to water (feet)	47.13	47.13	47.05	47.05	47.05	47.15	47.15	47.14	47.27	47.28
volume purged (L)	0.5	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5

SAMPLE ANALYSIS INFORMATION

ANALYSIS REQUIRED: VOC

LABORATORY: STL Edison
CONTACT:

Casing Diameter/Volume conversions (inches)	(gallons per foot)
2.0	0.1632
4.0	**0.6528**
6.0	1.4687
8.0	2.6115

NOTES: 4-inch well

MALCOLM PIRNIE 17-17 Rt 208 NORTH, FAIRLAWN, NEW JERSEY 07410

GROUNDWATER MONITORING WELL SAMPLE COLLECTION LOGS

PROJECT NUMBER: 4563001
DATE: 11/13/2007
PROJECT NAME: GTEOSI
SAMPLERS: Jeff DeKoskie, Chris Goldsmith
SITE LOCATION: Hicksville, NY
SITE CONTACT:
WEATHER: Sunny, mild, 60°F

WELL IDENTIFICATION NUMBER: MWP-110-355

PERMIT:

WELL HEADSPACE READING: 2.5
PID MODEL/LAMP: mini rae 2000
DEPTH TO WATER (Before Purging): 47.15 FEET FROM TOP OF CASING
WELL DEPTH: 354.54 FEET FROM TOP OF CASING
HEIGHT OF WATER IN WELL: 307.39 FEET
WATER IN ONE WELL VOLUME: 200.6642 GALLONS
PURGE TIME (start/finish): 15:00 / 16:25
PURGE RATE: 300 ml/min
WELL EVACUATION DEVICE: Marschalk bladder pump
SAMPLING TIME (start/finish): 16:30 / 16:35
SAMPLE RATE: 250 ml/min
SAMPLE COLLECTION DEVICE: Marschalk bladder pump
SAMPLE APPEARANCE: Clear

FIELD PARAMETERS	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th
time (00:00)	15:55	16:00	16:05	16:10	16:15	16:20	16:25			
pH (SU)	5.37	5.37	5.37	5.38	5.38	5.38	5.39			
specific conductivity (mS)	0.200	0.200	0.200	0.200	0.200	0.200	0.200			
turbidity (NTU's)	42	36	41	36	38	35	31			
dissolved oxygen (mg/l)	1.01	1.00	1.00	0.97	0.96	0.96	0.93			
temperature (degrees C)	13.9	13.9	13.9	13.9	13.9	13.9	13.9			
redox potential (mv)	173.5	172.8	171.9	171.9	169.3	168.7	167.5			
depth to water (feet)	47.38	47.42	47.44	47.41	47.41	47.42	47.42			
volume purged (L)	15.0	16.5	18.0	19.5	21.0	22.5	24.0			

SAMPLE ANALYSIS INFORMATION

ANALYSIS REQUIRED: VOC

LABORATORY: STL Edison
CONTACT:

Casing Diameter/Volume conversions

(inches)	(gallons per foot)
2.0	0.1632
4.0	**0.6528**
6.0	1.4687
8.0	2.6115

NOTES: 4-inch well

MALCOLM PIRNIE 17-17 Rt 208 NORTH, FAIRLAWN, NEW JERSEY 07410

GROUNDWATER MONITORING WELL SAMPLE COLLECTION LOGS

PROJECT NUMBER: 4563001
DATE: 11/14/2007
PROJECT NAME: GTEOSI
SAMPLERS: Jeff DeKoskie, Chris Goldsmith
SITE LOCATION: Hicksville, NY
SITE CONTACT:
WEATHER: Sunny, mild, 60°F

WELL IDENTIFICATION NUMBER: MWP-114-290

PERMIT:

WELL HEADSPACE READING: 0.0
PID MODEL/LAMP: mini rae 2000
DEPTH TO WATER (Before Purging): 47.68 FEET FROM TOP OF CASING
WELL DEPTH: 289.61 FEET FROM TOP OF CASING
HEIGHT OF WATER IN WELL: 241.93 FEET
WATER IN ONE WELL VOLUME: 157.9319 GALLONS
PURGE TIME (start/finish): 08:25 / 10:30
PURGE RATE: 300 ml/min
WELL EVACUATION DEVICE: Marschalk bladder pump
SAMPLING TIME (start/finish): 10:35 / 10:40
SAMPLE RATE: 250 ml/min
SAMPLE COLLECTION DEVICE: Marschalk bladder pump
SAMPLE APPEARANCE: Brown to clear

FIELD PARAMETERS	initial	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
time (00:00)	8:30	8:35	8:40	8:45	8:50	8:55	9:00	9:15	9:35	9:40
pH (SU)	5.27	5.49	5.49	5.45	5.38	5.31	5.30	5.16	5.16	5.18
specific conductivity (mS)	0.365	0.355	0.353	0.351	0.338	0.330	0.336	0.303	0.291	0.291
turbidity (NTU's)	60	45	45	41	>999	>999	>999	>999	>999	>999
dissolved oxygen (mg/l)	2.44	1.60	1.51	1.21	1.24	0.97	0.85	1.26	1.04	0.98
temperature (degrees C)	13.5	14.1	14.2	14.2	14.2	14.4	14.4	14.5	14.6	14.6
redox potential (mv)	138.1	177.0	177.6	175.7	176.9	149.0	144.9	151.4	165.4	168.0
depth to water (feet)	47.91	47.90	47.90	47.89	47.88	47.88	47.90	47.90	48.03	48.06
volume purged (L)	0.5	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5

SAMPLE ANALYSIS INFORMATION

ANALYSIS REQUIRED: VOC

LABORATORY: STL Edison
CONTACT:

Casing Diameter/Volume conversions

(inches)	(gallons per foot)
2.0	0.1632
4.0	**0.6528**
6.0	1.4687
8.0	2.6115

NOTES: 4-inch well
09:00 Clean out flow thru cell
09:15 Clean out flow thru cell

MALCOLM PIRNIE

17-17 Rt 208 NORTH, FAIRLAWN, NEW JERSEY 07410

GROUNDWATER MONITORING WELL SAMPLE COLLECTION LOGS

PROJECT NUMBER:	4563001	DATE:	11/14/2007
PROJECT NAME:	GTEOSI	SAMPLERS:	Jeff DeKoskie
SITE LOCATION:	Hicksville, NY		Chris Goldsmith
SITE CONTACT:		WEATHER:	Sunny, mild, 60°F

WELL IDENTIFICATION NUMBER: MWP-114-290 **PERMIT:**

WELL HEADSPACE READING: 0.0 PID MODEL/LAMP: mini rae 2000
DEPTH TO WATER (Before Purging): 47.68 FEET FROM TOP OF CASING
WELL DEPTH: 289.61 FEET FROM TOP OF CASING
HEIGHT OF WATER IN WELL: 241.93 FEET
WATER IN ONE WELL VOLUME: 157.9319 GALLONS
PURGE TIME (start/finish): 08:25 / 10:30 PURGE RATE: 300 ml/min
WELL EVACUATION DEVICE: Marschalk bladder pump
SAMPLING TIME (start/finish): 10:35 / 10:40 SAMPLE RATE: 250 ml/min
SAMPLE COLLECTION DEVICE: Marschalk bladder pump
SAMPLE APPEARANCE: Brown to clear

FIELD PARAMETERS	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th
time (00:00)	9:45	9:50	9:55	10:00	10:05	10:10	10:15	10:20	10:25	10:30
pH (SU)	5.19	5.22	5.22	5.11	5.12	5.13	5.14	5.15	5.16	5.16
specific conductivity (mS)	0.291	0.294	0.294	0.300	0.301	0.303	0.304	0.307	0.308	0.307
turbidity (NTU's)	>999	856	764	77	68	66	67	70	64	66
dissolved oxygen (mg/l)	1.20	1.28	1.16	1.75	1.29	1.24	0.98	0.88	0.85	0.83
temperature (degrees C)	14.5	14.7	14.7	14.8	14.8	14.8	14.9	14.8	14.8	14.9
redox potential (mv)	173.2	249.0	233.0	188.5	190.3	197.4	196.8	198.6	198.7	196.7
depth to water (feet)	48.08	48.14	48.17	48.15	48.15	48.15	48.14	48.14	48.14	48.14
volume purged (L)	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5

SAMPLE ANALYSIS INFORMATION

ANALYSIS REQUIRED: VOC

LABORATORY: STL Edison
CONTACT:

Casing Diameter/Volume conversions (inches)	(gallons per foot)
2.0	0.1632
4.0	**0.6528**
6.0	1.4687
8.0	2.6115

NOTES: 4-inch well
Duplicate sample collected

Data Usability Summary Report

Former Sylvania Electric Products
GTE Operations Support Incorporated
Hicksville Site

10/07 -11/07 Groundwater Sampling Event

VALIDATION REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected south of the former Sylvania Electric Products Incorporated facility in Hicksville, New York. Sample collection activities were conducted by Malcolm Pirnie, Inc. between October 30, 2007 and November 14, 2007. The environmental samples collected for this investigation were submitted to TestAmerica Laboratories, Inc. (formerly Severn Trent Laboratories, Inc.) of Earth City, MO for Target Compound List Volatile Organic Compound (TCL VOC) analyses using United States Environmental Protection Agency (USEPA) guidance methods. The analytical data generated for this investigation were evaluated by Data Validation Services (DVS) using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998;
- *United States Environmental Protection Agency Contract Laboratory Program National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008, October 1999;
- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and
- *United States Environmental Protection Agency Region II Contract Laboratory Program Organics Data Review*, SOP No. HW-6, Revision #11 (USEPA 1996a)

Professional judgment can be used to qualify results as estimated (J or UJ) in instances when so indicated by the overall quality of data.

A method non-conformance was observed with Laboratory Control Sample (LCS) recoveries, regarding which there was no significant effect on sample reported results. The equipment and trip blanks contained low level contamination of between one and three target compounds. The presence of these contaminants in those blanks indicate that some of the low level sample detections of these same analytes are to be considered as resulting from external contamination.

Also included in the data validation process is the replacement of results determined from responses that exceeded the laboratory calibration range (i.e., qualified with an "E" by the laboratory) with those reflecting responses (from dilution analyses) within the calibration range.

None of the exceedances or method non-conformance were significant enough to jeopardize the usability of the data. The reported sample results are usable based on the findings listed in this Data Usability Summary Report (DUSR).

Overall, 100 percent of the VOC data reported in the laboratory data packages were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to data validation QA/QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples collected south of the former Sylvania Electric Products Incorporated facility in Hicksville, New York (the Site). Sample collection activities were conducted between October 30, 2007 and November 14, 2007 by Malcolm Pirnie, Inc. A total of ten groundwater samples, two field duplicates, two trip blanks, and two equipment blanks were processed.

The laboratory Sample Delivery Group (SDG) (unique data package number), field identification, and laboratory identification number of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1: *Sample Cross-Reference List*

SDG	***Client ID***	***Laboratory ID***	***Analysis Requested***
F7K090121	P-118-361.55	F7K090121-001	VOCs by USEPA 8260B
	P-118-389.85	F7K090121-002	VOCs by USEPA 8260B
	P-118-426.40	F7K090121-003	VOCs by USEPA 8260B
	P-118-Dup#2	F7K090121-004	VOCs by USEPA 8260B
	Equipment Blank #6	F7K090121-005	VOCs by USEPA 8260B
	Trip Blank 10231108	F7K090121-006	VOCs by USEPA 8260B
F7K160121	MWP-114-170	F7K160121-001	VOCs by USEPA 8260B
	MWP-110-440	F7K160121-002	VOCs by USEPA 8260B
	MWP-110-355	F7K160121-003	VOCs by USEPA 8260B
	MWP-114-290	F7K160121-004	VOCs by USEPA 8260B
	P-118-450	F7K160121-007	VOCs by USEPA 8260B
	P-118-531.5	F7K160121-008	VOCs by USEPA 8260B
	P-118-537.4	F7K160121-009	VOCs by USEPA 8260B
	MWP-DUP-1	F7K160121-005	VOCs by USEPA 8260B
	MWP-EB-1	F7K160121-006	VOCs by USEPA 8260B
	TB11091115	F7K160121-010	VOCs by USEPA 8260B

1.2. General Considerations

The data validation review process is designed to evaluate the specific technical aspects of the analytical laboratory processing and the sample matrix, to verify that the final data reported for the field samples accurately reflect sample constituency, and to inform the end-user of the limitation of the data in the event that they do not. This report summarizes the findings of the review and outlines any deviations from the applicable QC criteria outlined in the following documents:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* (SW846) USEPA, Final Update IIIA, April 1998.

- *USEPA CLP National Functional Guidelines for Organic Data Review*, EPA 540-R-99-008, October 1999.

- *Analytical Services Protocol (ASP), New York State Department of Environmental Conservation* (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000)

- *USEPA Region II CLP Organics Data Review*, SOP No. HW-6, Revision #11 (USEPA 1996a); and

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to TestAmerica Laboratories, Inc. of Earth City, Missouri for volatile organic compound (VOC) analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW846 Method 5030B Purge/Trap Analysis
- SW846 Method 8260B Gas Chromatography/Mass Spectrometry

Each data package represents a sample delivery group (SDG), a collection of specific samples assigned during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and controls QC analyses. A total of two SDGs, each containing between three and seven groundwater samples (and accompanying field QC), were created and processed for this project scope. The SDG, field identification and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. A summary of the findings associated with the validation and the specific QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Data completeness and usability are discussed in Section 4. Section 5 presents the DUSR Summary Information.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

Validation of the data was performed using guidance from the project QAPP (GTEOSI, 2002), the analytical methodology, and the data validation guidelines referenced in Section 1.

DVS performed a data review of all analytical results to assess data quality. A data review includes an assessment of sample handling protocols, supporting laboratory quality control (QC) parameters, and field QC. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B
- Analytical methods performed and test method references
- Sample condition - review of log-in records for cooler temperature, presence of headspace, chemical preservation, etc.
- Holding times -comparison of collection and analysis dates

- Analytical results -units, values, significant figures, reporting limits, calculation algorithms
- Sample traceability and comparison to raw data
- Instrument tuning
- Initial calibration standards
- Continuing calibration standards
- Method blank results and laboratory contamination
- Laboratory control sample (LCS/MSB) results and comparison to laboratory and NYSASP control limits
- Matrix spike/matrix spike duplicate (MS/MSD) results; comparison to laboratory control limits
- Field duplicate results and comparison to data review criteria
- Surrogate recoveries and comparison to laboratory control limits
- Internal Standards and comparison to method and validation criteria
- Field QC sample (e.g., trip blanks, equipment blanks, etc.) --external contamination;
- Reporting Limits and dilutions

Review was performed on the laboratory analytical reports to determine completeness of the data packages and the acceptability of the accompanying QC data. When QC results fell outside recommended or required QC limits, validation data qualifiers were applied to the results in order to reflect the potential compromise in the integrity of the originally reported result. These qualifiers are in addition to, or a revision of, the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory:

"U"/ "ND"

Non-detected result at the required QAPP reporting limit--- the laboratory utilizes "U" within the full data package, and "ND" in the summary package report Forms I equivalents.

"B" Associated with a result if the compound was identified in the corresponding method blank.

"J" Indicates an estimated value or a value below the established reporting limit but above the method detection limit.

"E" This flag identifies compounds whose concentrations exceed the calibration range of the instrument for the specific analysis; data qualified with an "E" are qualitative only and not useable for quantitative purposes. All results qualified with an "E" were required to be re-analyzed using an applicable dilution and re-reported.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

"U"/"ND"

The analyte was not detected at the indicated reporting limit.

"J" Estimated concentration because the result was below the sample reporting limit or quality control criteria were not met.

"UJ" The chemical was not detected at or above the indicated reporting limit. However, the reporting limit is approximate and may or may not represent the actual limit of reporting necessary to accurately and precisely measure the analyte in the sample.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes the review evaluation and subsequent usability of the data generated for this sampling event, as indicated by results of quality control parameters associated with the project samples. Laboratory compliance with required deliverables and processing was also assessed.

3.2. Validation Review

3.2.1. Completeness Review

The laboratory data packages were generated to include summary forms and raw data as specified in the New York State Department of Environmental Conservation (NYSDEC) Category B format. All summary form and raw data required for full validation review were provided. Custody and login forms pertaining to one of the data packages were provided on request.

3.2.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. These included SW846 Method 5030B (aqueous sample purge/trap analysis) followed by Method 8260B (gas chromatography/mass spectrometry). The samples were analyzed using a 25-mL purge volume, thus providing lower reporting limits for each compound than those available with the unmodified method.

3.2.3. Sample Receipt

Sixteen aqueous samples were submitted for VOC analysis between October 30, 2007 and November 14, 2007. This included ten field samples, two field duplicates, two equipment blanks, and two trip blanks.

The sample temperatures at the time of receipt were within the recommended temperature range of 4°C±2°C for all deliveries.

Field and laboratory personnel completed the Chain-of-Custody (COC) documents correctly recording the signature, date, and time of custody transfer.

The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This Form identifies whether the containers were received undamaged, within the proper temperature range, at the proper pH, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory.

Discrepancies between label information and custody form entries were observed, relating to collection times and sample identifications of two samples. Custody form entries were utilized.

A hand-edit was made to one sample ID entry on the custody, from "MWP-114-120" to "MWP-114-170". That edit should have been dated and initialed when made.

3.2.4. Holding Times

The technical and contractual holding times between sample collection and laboratory analyses meet method and QAPP requirements of 14-days for acid preserved field samples.
The trip blank associated with the 11/08/07 shipment was received by the laboratory outside of analytical holding time from the date of filling. The results for that blank are therefore qualified as estimated, with a potentially low bias. This means that the potential for external contamination in those three associated project samples (and the field duplicate) has not been thoroughly evaluated. Results for low-level detections in those samples should be used with that consideration. Table 3-1 shows a summary of that blank and qualified parameters.

Table 3-1. *Evaluation of Holding Times*

Package Identification	*Sample IDs*	*Compounds*	*Action*
F7K090121	Trip Blank 10231108	All	Qualify non-detections "UJ" Qualify detections "J"

3.2.5. Analytical Results

The laboratory provided a Form I equivalent with the reported analytical results for the requested analyses. The Form I format that was submitted is not strictly in compliance with USEPA CLP requirements as regards the inclusion of laboratory name and code. The forms do show the client sample identification, the laboratory sample identification, the file identification, the matrix, the date and time the sample was collected, the date the sample was received, the date and time the sample was analyzed, the dilution factor, the preparation batch identification number, the chemical abstract service (CAS) number for each analyte, the units of measure; and the laboratory qualifier (if any). Additional CLP forms were provided (e.g., II, III, etc.) to report applicable QC information for the analyses performed. The laboratory provided all the necessary forms for the VOC method.

3.2.6. Traceability to Raw Data

The traceability of the sample results to the raw data was easily accomplished by the use of the information on the summary forms and laboratory analysis logs.

3.2.7. Instrument Tuning

The GC/MS system performance was shown to produce acceptable mass identifications and sensitivity with the evaluation of the instrument tuning compound bromofluorobenzene (BFB). All requirements for mass fragmentation and resolution were met. The instrument performance was checked prior to calibration and once every 12-hour shift for all analytical QC batches.

3.2.8. Initial Calibration

Calibration standards are analyzed at required frequency and concentration in order to show that the instrumentation is performing consistently and to establish the linear range of response.

All linearity relative standard deviations (%RSD) met analytical and validation guidelines.

Relative response factors (RRFs) were within method protocol requirements. However, responses for acetone and 2-butanone in the calibration standards show RRFs typical for this methodology, but below the validation limit of 0.05 noted in the guidance documents cited earlier in this narrative. The acetone and 2-butanone RRFs observed with this project are considered acceptable (above 0.01) in the updated USEPA Region II low level volatile analysis validation SOP (HW-33), further supporting judgment that the data are usable. Acceptance of these data is based upon the linearity and consistency of standard responses, the recoveries of these analytes in the spiked QC, and the quality of the mass spectra of acetone. Data for those compounds in all project samples and QC are qualified as estimated. Table 3-2 shows the samples and indicated qualifications:

Table 3-2. *Evaluation of Initial Calibration Results*

Package Identification	*Sample IDs*	*Compounds**	*Action*
F7K090121 F7K160121	All	Acetone and 2-butanone	Qualify detections "J" Qualify non-detections "UJ"

3.2.9. Continuing Calibration

The continuing calibration standards (CCAL) were performed with a mid-level standard immediately following the tuning check at the beginning of each 12-hour analytical sequence. The CCAL verification analyses met method criteria (i.e., RRFs were >0.05 for the SPCCs, and the percent differences (%Ds) from the avgRRF were < 20% for the CCCs) for all analytical QC batches. For the target compounds, the %Ds were greater than 20% for three compounds. Although method criteria were met, as a conservative approach the results associated with a CCAL that exceeded 20%D were qualified as estimated ("J" or "UJ"). Table 3-3 shows a summary of the samples and qualified parameters.

Table 3-3. *Evaluation of Continuing Calibration Results*

Package Identification	*Sample ID*	*Compound (%D)*	*Action*
F7K090121	P-118-361.55 P-118-389.85 P-118-426.40 P-118-DUP#2 Equipment Blank #6 Trip Blank 10231108	Carbon tetrachloride (31%D)	Qualify detections "J" Qualify non-detections "UJ"

3.2.10. Laboratory Method Blanks

Blanks are processed to evaluate the potential for external contamination at sample collection, transport, and analysis.

Method blanks are clean water samples that are processed as part of the analytical sequence, and whenever contamination may be present in the analytical system.

Laboratory method blanks showed no contamination, with the exception of one in which bromomethane was detected at a low concentration. There were no detections of this compound in the field samples, and reported results are therefore unaffected.

3.2.11. Laboratory Control Sample Results

LCSs are fortified blanks that are spiked with known concentrations of specific analytes. The recoveries of these analytes confirm that laboratory processing and instrumentation are producing accurate and consistent results.

LCSs were processed at the correct frequency, and in duplicate, thus providing evaluation for precision as well as accuracy. All percent recoveries were within laboratory control limits and validation action levels with the exception of those for bromomethane (215% and 224%, above 140%) in one pair of the LCSs. Bromomethane was not detected in associated samples and results are therefore not affected.

Acetone showed an elevated duplicate correlation (22%RPD, above 20%RPD) in that same set. Two of the samples show acetone detections, and are therefore qualified as estimated in value. Table 3-4 shows the affected samples:

Table 3-4. *Evaluation of Laboratory Control Sample Results*			
Package Identification	***Client ID***	***Compound***	***Action***
F7K160121	P-118-531.5 P-118-537.4	Acetone	Qualify detections "J"

3.2.12. Matrix Spike/Matrix Spike Duplicate Analyses

Target analyte compounds are added to defined project samples in order to monitor how well those analytes recover through the analytical process. Duplicate matrix spike or duplicate parent sample results are also compared to see how well they correlate to one another. Those recoveries indicate the accuracy and precision of sample reported results.

No project samples were submitted or processed for MS/MSD evaluations. Non-project batch QC accuracy and precision data were provided, and show several analytes with either outlying recoveries or elevated duplicate correlations. No qualification is made to the samples in this project due to matrix effects of other project samples.

3.2.13. Field Duplicate Analyses

P-118-426.40 and P-114-290 were submitted with accompanying field duplicates. An evaluation of the precision of the field sampling procedure (as well as the laboratory analysis procedure) was made based on the relative percent difference (RPD) calculated for the original and duplicate sample results. RPD calculations were made only when both results were above the laboratory reporting limits. The RPD values for all compounds were less than 30% (aqueous data evaluation criteria).

3.2.14. Trip Blanks and Equipment Blanks

Blanks are processed to evaluate the potential for external contamination at sample collection, transport, and analysis.

- Equipment blanks are collected by pouring de-ionized water through decontaminated sampling equipment in order to verify that the decontamination process is performed completely.

- Trip blanks are sealed vials of clean water that are transported with the sample vials from the mobile laboratory to the site prior to sample collection, and from the site to the laboratory with the collected samples. They are stored and processed with the project samples, thus reflecting potential contamination from external sources.

Two trip blanks and two equipment blanks were submitted with the groundwater samples. One trip blank showed low-level contamination of trichloroethene, and the other trip blank showed low-level contamination of chloromethane, chloroethane, and trichloroethene. One of the equipment blanks showed no contamination, and the other showed low-level detections of carbon tetrachloride and trichloroethene. Results for these specific analytes in associated field samples that were found at concentrations below the validation action limit have been edited to reflect the fact that the sample detected values may be a result of external contamination. Edits to the affected target compounds were based on trip and equipment blank contamination, in accordance with practices described in the validation guidance documents listed in Sections 1.2. Table 3-5 shows the samples and compounds that were qualified as non-detect ("U").

Table 3-5. *Evaluation of Trip Blank and Equipment Blank Results*			
Package Identification	***Sample ID***	***Compound*** (Blank concentration)	***Action***
F7K090121	P-118-361.55	Carbon tetrachloride (0.13 ug/L)	Edit to "U" or "ND"
	P-118-361.55 P-118-389.85 P-118-426.40 P-118-DUP#2	Chloromethane (0.67 ug/L)	Edit to "U" or "ND"
	P-118-361.55	Trichloroethene (0.19 ug/L)	Edit to "U" or "ND"

3.2.15. System Monitoring Compounds

System Monitoring Compounds (SMC) are surrogate standards that behave similarly to the target analytes during the analysis procedures, and serve to monitor system performance and potential sample matrix interference.

The three SMC evaluated in the TCL VOA analyses show acceptable recoveries in the field samples. This indicates that there are no significant sample matrix effects on the recoveries of target analytes, and aids in the confirmation of reported quantitative values.

3.2.16. Internal Standards

System performance and sample matrix interferences are evaluated during the VOA analyses by the addition of internal standard compounds to all samples and associated QC.

All samples show internal standards within the required range. The retention times of the internal standards fell within ± 30 seconds from that of the most recent calibration for all analyses.

3.2.17. Compound Identification and Quantitation of Results

The retention times and mass spectra of detected analytes meet protocol requirements for identification of the target analytes.

The retention times of detected analytes meet protocol requirements for identification.

Raw data were provided for review in the data package. Calculation algorithms, quantitative results, and reporting limit values have been confirmed during this review process.

Ten of the project samples were processed at secondary dilution in order to bring certain of the analyte detected responses into instrument calibration range. The results derived from the dilution analyses are used for those specific sample analyte results, as shown in Table 3-6.

Table 3-6. *Summary of Laboratory Re-Analyses*

Package Identification	***Client ID***	***Compound Reported From Dilution Analysis***
F7K090121	P-118-426.40	Tetrachloroethene Trichloroethene
	P-118-DUP#2	Tetrachloroethene Trichloroethene
F7160121	MWP-114-170	cis-1,2-Dichloroethene Trichloroethene
	MWP-110-440	Tetrachloroethene
	MWP-110-355	Trichloroethene
	MWP-114-290	Trichloroethene
	MWP-DUP-1	Trichloroethene
	P-118-450	Tetrachloroethene Trichloroethene Carbon Tetrachloride
	P-118-531.5	Tetrachloroethene Trichloroethene
	P-118-537.4	Tetrachloroethene Trichloroethene

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the VOC data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated ("J" and "UJ") due to data validation QA/QC exceedances should be considered conditionally usable. No project data have been rejected.

The samples collected from the site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (GTEOSI, 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration or detection limit of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples, and LCS recoveries indicate the accuracy of the data.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC.

These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. Proper documentation was provided to enable a thorough validation review of the analytical data.

2. Have all holding times been met?

All field sample holding times were met.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

The laboratory used the laboratory control limits during the analyses performed for this sampling event. Only minor QA/QC deviations were observed, with subsequent minimal qualification to sample data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USEPA guidance methods be used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for the analyses performed for this sampling event, which met data user and client needs.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The raw data confirm the reported qualitative and quantitative results that were submitted by the laboratory in the data packages.

Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data (although "ND" was used for "U" on the sample results report forms. The validation qualifiers were applied as required by validation guidelines listed in Section 1

References

URS Corporation, *Groundwater Investigation Work Plan, Former Sylvania Electric Products Facility, Hicksville, New York,* QAPP: Appendix C. September 2002.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, (SW846) USEPA, Final Update IIIA, April 1998;

United States Environmental Protection Agency Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540-R-99-008, October 1999;

Analytical Services Protocol (ASP), New York State Department of Environmental Conservation (NYSDEC). Guidance documents including Exhibits A, B, C, D, E, F, G, H, and I. (June 2000), and

United States Environmental Protection Agency Region II Contract Laboratory Program (CLP) Organics Data Review, SOP No. HW-6, Revision #11 (USEPA 1996a)

Former Sylvania Electric
Products Facility, Hicksville, NY
Voluntary Cleanup Program
Site No. V00089-1

MALCOLM PIRNIE

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Data Report P118, MWP 110-355, MWP 110-440, MWP 114-170 and MWP 114-290

April, 2008

4563001

GTE Operations Support Incorporated

Basking Ridge, New Jersey

Former Sylvania Electric Products Incorporated Facility
Hicksville, NY
Voluntary Cleanup Program
Site No. V00089-1

Data Report
P103, P107 and P108

February 2008

Report Prepared By:

Malcolm Pirnie, Inc.

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4563001

MALCOLM PIRNIE

LEGEND

PROFILE LOCATION - DATA INCLUDED IN THE MALCOLM PIRNIE GROUNDWATER INTERPRETATION REPORT DATED JULY 2005.

PROFILE LOCATION - DATA INCLUDED IN THE MALCOLM PIRNIE SEPTEMBER 2007 DATA PACKAGE.

NOTES

1. AERIAL IMAGE FROM NYS GIS CLEARINGHOUSE HIGH RESOLUTION DIGITAL ORTHOIMAGERY (6-INCH RESOLUTION - 2004).

SCALE IN FEET

0 150 300 600

MALCOLM PIRNIE	GTE - OPERATIONS SUPPORT, INC. HICKSVILLE, NY FORMER SYLVANIA ELECTRIC PRODUCTS FACILITY	PROFILE LOCATIONS COMPLETED AS OF SEPTEMBER 2005	MALCOLM PIRNIE, INC. FEBRUARY 2008 FIGURE 1

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Stone VOC Data - Groundwater Profiles P103, P107 and P108
GTEOSI
Former Sylvania Electric Products Facility
Hicksville, NY

Client: GTEOSI
Location: Hicksville, NY
Project ID: Groundwater Profiling
SEI #: 03-1402
Date Sampled: 4/18 - 4/28/05
Date Analyzed: 4/18 - 4/28/05
Report Date: 5/19/2005

Matrix: Water

HOLE ID = P103

	VOC DATA, ug/L																INORGANIC DATA, mg/L					COELUTING COMPOUNDS		
	Vinyl Chloride			t-Dichloroethene			c-Dichloroethene			Trichloroethene			Tetrachloroethene			% SS						Freon 113 / Freon 123A		
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF		Fe^{+2}	Fe, Total	Ammonia	Chloride	Chlorine, Total		Q	DF
-74.0	4	U	4	4	U	4	4	U	4	19		4	430		1	105	nd	0.04	0.02	26	0.50	4	U	4
-84.5	1	U	1	1	U	1	1	U	1	1		1	60		1	105	0.05	0.21	0.13	10	0.05	1	U	1
-94.5	1	U	1	1	U	1	1	U	1	1		1	18		1	84	0.06	0.35	0.03	25	0.03	1	U	1
-104.5	1	U	1	1	U	1	1	U	1	1		1	11		1	83	0.26	2.37	1	68	nd	1	U	1
-114.5	1	U	1	1	U	1	1	U	1	1	U	1	3		1	83	nd	0.10	nd	89	0.04	1	U	1
-124.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	80	0.10	0.42	0.9	131	0.04	1	U	1
-134.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84	0.18	0.58	0.35	174	0.04	1	U	1
-144.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	87	0.10	0.25	0.07	155	0.03	1	U	1
-154.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	82	1.40	4.80	0.04	185	0.06	1	U	1
-164.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	81	0.10	0.29	0.09	149	0.08	1	U	1
-174.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	86	0.11	0.32	0.11	66	0.07	1	U	1
-184.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84	0.07	0.24	0.08	180	0.03	1	U	1
-194.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	78	0.04	0.11	0.04	167	0.03	1	U	1
-204.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	81	0.11	0.28	0.22	205	0.07	1	U	1
-214.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	77	0.03	0.06	0.11	255	0.04	1	U	1
-224.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	81	0.08	0.18	0.11	151	0.03	1	U	1
-234.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	86	0.04	0.09	0.08	218	0.03	1	U	1
-244.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84	0.03	0.04	nd	329	nd	1	U	1
-253.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84	0.12	0.24	0.22	483	0.05	1	U	1
-264.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83	0.06	0.19	0.15	568	0.38	1	U	1
-274.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84	nd	0.08	0.03	658	0.03	1	U	1
-284.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	78	0.06	0.30	nd	745	0.03	1	U	1
-294.3	1	U	1	1	U	1	1	U	1	1	U	1	5		1	76	0.05	0.20	nd	841	0.04	1	U	1
-303.5	1	U	1	1	U	1	1	U	1	1	U	1	8		1	83	nd	0.03	nd	978	0.02	1	U	1
-333.4	1	U	1	1	U	1	1	U	1	1	U	1	8		1	83	0.04	0.12	nd	421	nd	1	U	1
-344.2	1	U	1	1	U	1	1	U	1	3		1	2		1	76	0.17	0.75	0.54	41	0.05	1	U	1
-354.2	1	U	1	1	U	1	1	U	1	3		1	1	U	1	81	0.13	0.16	0.45	18	0.08	1	U	1
-376.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	78	0.25	0.40	0.37	17	0.09	1	U	1
-384.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	80	0.07	0.12	0.08	21	nd	1	U	1
-394.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	82	0.12	0.18	0.18	12	0.03	1	U	1
-404.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84	0.14	0.22	0.37	14	0.08	1	U	1

VOC DATA, ug/L

	1,1-Dichloroethene			Freon 123			1,1-Dichloroethane			1,1,1-Trichloroethane			Benzene			1,2-Dichloroethane			Toluene		
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF
-74.0	4	U	4	4	U	4	4	U	4	4	U	4	4	U	4	4	U	4	4	U	4
-84.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-94.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-104.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-114.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-124.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-134.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-144.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-154.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-164.5	1		1	1	U	1	2		1	2		1	1	U	1	1	U	1	1	U	1
-174.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-184.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-194.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-204.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-214.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-224.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-234.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-244.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-253.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-264.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-274.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-284.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-294.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-303.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-333.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-344.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1		1	1	U	1
-354.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-376.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-384.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-394.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-404.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1

	Chlorobenzene			Ethylbenzene			m,p-Xylene			o-Xylene			1,3-Dichlorobenzene			1,4-Dichlorobenzene			1,2-Dichlorobenzene			%SS
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
-74.0	4	U	4	4	U	4	8	U	4	4	U	4	4	U	4	4	U	4	4	U	4	105
-84.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
-94.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84
-104.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83
-114.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83
-124.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	80
-134.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84
-144.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	87
-154.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	82
-164.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	81
-174.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	86
-184.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84
-194.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	78
-204.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	81
-214.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	77
-224.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	81
-234.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	86
-244.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84
-253.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84
-264.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83
-274.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84
-284.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	78
-294.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	76
-303.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83
-333.4	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	83
-344.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	76
-354.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	81
-376.1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	78
-384.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	80
-394.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	82
-404.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	84

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb
%SS = Surrogate Recovery
U = Undetected below the specified reporting limit.
J = Estimated value.
ND = Value below detection limit
NS = Not Sampled
DF = Laboratory Dilution Factor

2/28/2008 2:30 PM

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Stone VOC Data - Groundwater Profiles P103, P107 and P108
GTEOSI
Former Sylvania Electric Products Facility
Hicksville, NY

Client: GTEOSI
Location: Hicksville, NY
Project ID: Groundwater Profiling
SEI #: 03-1402
Date Sampled: 5/16 - 5/25/05
Date Analyzed: 5/16 - 5/25/05
Report Date: 5/31/2005

Matrix: Water

HOLE ID =P107

VOC DATA, ug/L

Depth	Vinyl Chloride			t-Dichloroethene			c-Dichloroethene			Trichloroethene			Tetrachloroethene			% SS
	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
-74.30	1	U	1	1	U	1	1	U	1	1	U	1	2		1	95
-84.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
-94.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
-104.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
-114.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
-124.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
-134.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94
-144.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
-154.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
-164.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
-174.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116
-184.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
-194.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
-204.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	120
-214.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
-224.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
-234.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116
-244.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
-254.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
-264.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
-274.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
-285.80	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
-294.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
-304.20	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	107
-316.40	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	91
-324.05	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
-334.05	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
-350.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
-359.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
-371.60	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
-378.20	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
-391.50	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103

INORGANIC DATA, mg/L

Fe^{++}	Fe, Total	Ammonia	Chloride	Chlorine, Total
ND	0.03	0.04	116	0.03
0.06	0.11	0.08	88	0.04
0.16	0.40	0.14	92	0.17
0.16	0.31	0.10	53	0.17
0.07	0.15	0.10	239	0.12
0.05	0.08	0.09	104	0.09
0.05	0.10	0.09	90	0.07
0.05	0.06	0.04	93	0.04
0.04	0.07	0.04	117	0.02
0.04	0.10	0.04	301	0.03
0.04	0.05	0.02	374	0.04
0.04	0.09	0.08	398	0.04
0.09	0.13	0.05	389	0.09
0.03	0.03	0.04	424	0.04
0.03	0.08	0.06	507	0.06
0.04	0.16	0.10	481	0.00
0.03	0.07	0.04	523	0.00
ND	0.05	0.05	526	ND
0.10	0.59	0.26	437	0.09
0.03	0.04	ND	14	ND
0.03	0.38	0.49	8	ND
ND	0.06	0.17	11	ND
0.07	0.07	ND	11	ND
0.20	5.90	0.3	43	0.00
0.05	0.17	0.31	105	0.07
0.15	0.29	0.26	18	0.13
0.14	0.51	0.37	8	0
0.05	0.15	0.03	6	ND
0.04	0.08	0.15	7	ND
0.14	0.35	0.28	7	0.04
0.03	0.10	0.07	6	ND
0.04	0.18	0.03	6	ND

COELUTING COMPOUNDS

Freon 113 / Freon 123A		
	Q	DF
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1
1	U	1

VOC DATA, ug/L

Depth	1,1-Dichloroethene			Freon 123			1,1-Dichloroethane			1,1,1-Trichloroethane			Benzene			1,2-Dichlorothane			Toluene		
	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF
-74.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-84.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-94.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-104.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-114.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-124.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-134.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-144.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-154.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-164.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-174.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-184.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-194.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-204.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-214.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-224.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-234.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-244.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-254.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-264.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-274.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-285.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-294.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-304.2	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1
-316.4	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1
-324.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-334.1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-350.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-359.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-371.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-378.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1
-391.5	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1

Depth	Chlorobenzene			Ethylbenzene			m,p-Xylene			o-Xylene			1,3-Dichlorobenzene			1,4-Dichlorobenzene			1,2-Dichlorobenzene			%SS
	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
-74.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
-84.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
-94.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	95
-104.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
-114.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
-124.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
-134.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	94
-144.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	98
-154.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
-164.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
-174.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116
-184.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
-194.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
-204.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	120
-214.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
-224.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
-234.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116
-244.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
-254.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
-264.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
-274.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
-285.8	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
-294.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	104
-304.2	1	UJ	1	1	UJ	1	2	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	107
-316.4	1	UJ	1	1	UJ	1	2	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	1	UJ	1	91
-324.1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108
-334.1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
-350.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	102
-359.3	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	101
-371.6	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
-378.2	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	106
-391.5	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb

%SS = Surrogate Recovery

U = Undetected below the specified reporting limit.

J = Estimated value.

J = Estimated value.

UJ = The analyte was not detected above the specified reporting limit. However, the reporting limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

DF =Laboratory Dilution Factor

2/28/20082:30 PM

STONE ENVIRONMENTAL INC

Mobile Laboratory Results Sheet

Stone VOC Data - Groundwater Profiles P103. P107 and P108
GTEOSI
Former Sylvania Electric Products Facility
Hicksville, NY

Client:	GTEOSI
Location:	Hicksville, NY
Project ID:	Groundwater Profiling
SEI #:	03-1402
Date Sampled:	5/02 - 5/02/05
Date Analyzed:	5/02 - 5/02/05
Report Date:	5/19/2005

Matrix: Water

HOLE ID =P108	VOC DATA, ug/L																INORGANIC DATA, mg/L					COELUTING COMPOUNDS		
	Vinyl Chloride			t-Dichloroethene			c-Dichloroethene			Trichloroethene			Tetrachloroethene			% SS						Freon 113 / Freon 123A		
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF		Fe²⁺	Fe, Total	Ammonia	Chloride	Chlorine, Total		Q	DF
-74.15	20	U	1	20	U	1	360		1	670		4	32000		240	107	0.04	0.07	0.07	21.5	0.05	20	U	1
-84.15	20	U	1	20	U	1	69		1	250		1	20000		192	106	0.07	0.16	0.09	26.6	nd	20	U	1
-94.15	20	U	1	20	U	1	20	U	1	20	U	1	6100		24	93	nd	0.07	0.14	16.3	0.10	20	U	1
-104.15	1	U	1	1	U	1	1		1	5		1	160		1	96	0.06	0.21	0.47	26.6	0.06	1	U	1
-114.15	1	U	1	1	U	1	1	U	1	1	U	1	29		1	77	0.32	0.87	0.69	94.0	0.33	1	U	1
-124.15	1	U	1	1	U	1	1	U	1	1		1	23		3	78	0.07	0.15	0.18	183	0.03	1	U	1
-134.15	1	U	1	1	U	1	1	U	1	1	U	1	15		1	110	nd	0.03	nd	43.1	nd	1	U	1
-144.15	1	U	1	1	U	1	1	U	1	1	U	1	28		1	111	0.05	0.08	0.07	37.5	0.03	1	U	1
-154.15	1	U	1	1	U	1	1	U	1	1	U	1	18		1	110	0.19	0.82	0.57	123	0.23	1	U	1
-164.15	1	U	1	1	U	1	1	U	1	1	U	1	14		1	107	0.06	0.14	0.16	275	0.05	1	U	1
-174.15	1	U	1	1	U	1	1	U	1	1	U	1	17		1	91	nd	0.07	0.03	118	nd	1	U	1
-184.15	1	U	1	1	U	1	1	U	1	1	U	1	8		1	91	nd	0.03	nd	94.2	0.03	1	U	1
-192.80	1	U	1	1	U	1	1	U	1	1	U	1	8		1	103	nd	0.03	nd	101	nd	1	U	1
-204.60	1	U	1	1	U	1	1	U	1	1	U	1	1		1	100	0.09	0.19	0.07	85.3	0.05	1	U	1
-214.60	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110	0.05	0.08	0.06	160	nd	1	U	1
-224.60	1	U	1	1	U	1	1	U	1	1	U	1	7		1	119	0.12	0.23	0.05	201	0.04	1	U	1
-234.60	1	U	1	1	U	1	1	U	1	1	U	1	1		1	99	nd	0.04	0.05	370	0.03	1	U	1
-244.60	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105	0.03	0.04	0.05	304	nd	1	U	1
-254.60	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114	0.03	0.05	0.06	327	nd	1	U	1
-264.60	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114	0.05	0.19	0.16	391	0.04	1	U	1
-293.40	1	U	1	1	U	1	1	U	1	1	U	1	1		1	119	nd	nd	nd	489	nd	1	U	1
-324.35	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116	0.07	0.30	0.21	119	0.03	1	U	1
-334.35	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103	0.18	1.60	1.36	108	0.08	1	U	1
-347.65	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103	22.00	126.00	11	8.95	nd	1	U	1
-359.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103	8.20	313.00	0.11	9.41	0.51	1	U	1
-384.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	117	0.08	0.17	0.06	7.19	0.03	1	U	1
-394.30	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108	0.26	0.68	0.49	5	0.12	1	U	1

	VOC DATA, ug/L																																												
	1,1-Dichloroethene			Freon 123			1,1-Dichloroethane			1,1,1-Trichloroethane			Benzene			1,2-Dichlorothane			Toluene			Chlorobenzene			Ethylbenzene			m,p-Xylene			o-Xylene			1,3-Dichlorobenzene			1,4-Dichlorobenzene			1,2-Dichlorobenzene			%SS
Depth	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	Value	Q	DF	
-74.2	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	40	U	1	20	U	1	20	U	1	20	U	1	20	U	1	107
-84.2	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	40	U	1	20	U	1	20	U	1	20	U	1	20	U	1	106
-94.2	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	20	U	1	40	U	1	20	U	1	20	U	1	20	U	1	1	U	1	93
-104.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	96
-114.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	77
-124.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	78
-134.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
-144.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	111
-154.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
-164.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	107
-174.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	91
-184.2	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	91
-192.8	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
-204.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	100
-214.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	110
-224.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	119
-234.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	99
-244.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	105
-254.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
-264.6	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	114
-293.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	119
-324.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	116
-334.4	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
-347.7	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	103
-359.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1		1	1	U	1	1	U	1	103
-384.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	117
-394.3	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	1	U	1	2	U	1	1	U	1	1	U	1	1	U	1	1	U	1	108

Samples with >100 ppb total VOC's cannot be run on a carboxen fiber and will have detection limits of 20 ppb

%SS = Surrogate Recovery

U = Undetected below the specified reporting limit.

J = Estimated value.

ND = Value below detection limit.

DF = Laboratory Dilution Factor

2/28/20082:30 PM

STL Groundwater Profile VOC Results
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Former Sylvania Electric Products Incorporated Facility
Hicksville, NY

COMPOUND NAME (Sample ID / Sampled Depth)	Units	P-103 EB#1	TRIP BLANK 4/21/05	P-103 74 ft	P-103 174.5 ft	P-103 344.2 ft	TB04210428	P-108 74.15 ft	P-108 84.15 ft	TB05020505	P-107 74.30 ft	TB05120519	P-107 324.1 ft	TB05202605
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	**0.28 J**	**0.94 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	**0.29 J**	**0.29 J**	**1.2**	1.0 U	1.0 U	**0.29 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	**0.34 J**	1.0 U	**0.63 J**	**0.18 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.18 J**	1.3 U	1.0 U	**0.10 J**	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	**0.11 J**	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.24 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	R	R	R	R	R	**0.82 J**	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	ug/L	R	R	R	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (MIBK)	ug/L	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	R	R	R	R	R	R	R	R	**2.1 J**	2.0 UJ	2.0 UJ	R	**8.4 J**
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.085 NJ**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	**0.89 J**	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	**0.96 J**	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 UJ	2.0 UJ	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 UJ	2.0 U	2.0 U
Carbon disulfide	ug/L	**0.44 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.017 NJ**	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.16 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	ug/L	**3.9**	1.0 U	1.0 U	1.0 U	1.0 U	**0.10 J**	**0.15 J**	1.0 U	1.0 U	**7.8**	1.0 U	1.0 U	**0.22 J**
Chloromethane	ug/L	2.0 U	**0.36 J**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	**1.8**	1.0 U	1.0 U	1.0 U	**380 J**	**79 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	**0.52 J**	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	1.0 U	**0.54 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	**200 J**	**0.28 J**	**1.3 J**	1.0 UJ	**21,000**	**12,000 J**	1.0 U	**0.65 J**	1.0 UJ	1.0 U	1.0 U
Toluene	ug/L	**0.69 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.23 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.68 J**	**0.69 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	**17**	1.0 U	**2.0**	1.0 U	**480 J**	**300 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
D-limonene	ug/L				**1.5 NJ**	**80 NJ**		**1.0 NJ**						
Cyclohexene, 1-methyl-4-(1-m...	ug/L					**1.3 NJ**								

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N = The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may
or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

STL Groundwater Profile Nickel Results
GTEOSI
Former Sylvania Electric Products Incorporated Facility
Hicksville, NY

Date Sampled	Date Analyzed	Location (depth)	Sample Description	Nickel Data (ug/L)
4/18/2005	04/28/2005	P-103 EB#1	Dissolved	40 U
4/19/2005	04/28/2005	P-103 74 ft	Dissolved	117
4/19/2005	04/28/2005	P-103 74 ft	Total	116
4/19/2005	04/28/2005	P-103 84.5 ft	Dissolved	250
4/19/2005	04/28/2005	P-103 94.5 ft	Dissolved	76.2
4/19/2005	04/28/2005	P-103 104.5 ft	Dissolved	90.1
4/19/2005	04/28/2005	P-103 114.5 ft	Dissolved	122
4/19/2005	04/28/2005	P-103 114.5 ft	Total	135
4/19/2005	04/28/2005	P-103 124.5 ft	Dissolved	114
4/20/2005	04/28/2005	P-103 134.5 ft	Dissolved	124
4/20/2005	04/28/2005	P-103 144.5 ft	Dissolved	60.7
4/20/2005	04/28/2005	P-103 144.5 ft	Total	80.7
4/20/2005	04/28/2005	P-103 154.5 ft	Dissolved	60.8
4/20/2005	04/28/2005	P-103 164.5 ft	Dissolved	62.7
4/20/2005	04/28/2005	P-103 174.5 ft	Dissolved	40.1
4/21/2005	04/28/2005	P-103 184.2 ft	Dissolved	31.2 J
4/21/2005	04/28/2005	P-103 194.2 ft	Total	28.4 J
4/21/2005	04/28/2005	P-103 194.2 ft	Dissolved	21.8 J
4/21/2005	04/28/2005	P-103 204.2 ft	Dissolved	32.4 J
4/21/2005	04/28/2005	P-103 214.2 ft	Dissolved	20.3 J
4/21/2005	04/28/2005	P-103 224.2 ft	Dissolved	13.2 J
4/21/2005	04/28/2005	P-103 234.2 ft	Dissolved	11.5 J
4/21/2005	05/09/2005	P103 244.2 ft	Total	22.5 J
4/21/2005	05/09/2005	P103 244.2 ft	Dissolved	20.2 J
4/21/2005	05/09/2005	P103 253.3 ft	Dissolved	14.9 J
4/22/2005	05/09/2005	P103 264.2 ft	Dissolved	27.2 J
4/22/2005	05/09/2005	P103 274.2 ft	Total	21.1 J
4/22/2005	05/09/2005	P103 274.2 ft	Dissolved	20.7 J
4/25/2005	05/09/2005	P103 284.25 ft	Dissolved	18.6 J
4/25/2005	05/09/2005	P103 294.25 ft	Dissolved	17.8 J
4/25/2005	05/09/2005	P103 303.25 ft	Total	21.3 J
4/25/2005	05/09/2005	P103 303.25 ft	Dissolved	26.9 J
4/26/2005	05/09/2005	P103 333.4 ft	Total	42.9
4/26/2005	05/09/2005	P103 333.4 ft	Dissolved	32.8 J
4/26/2005	05/09/2005	P103 344.2 ft	Dissolved	18.0 J
4/27/2005	05/09/2005	P103 354.2 ft	Dissolved	18.2 J
4/28/2005	05/09/2005	P103 376.1 ft	Dissolved	33.5 J
4/28/2005	05/09/2005	P103 384.2 ft	Dissolved	26.4 J
4/28/2005	05/09/2005	P103 394.2 ft	Dissolved	44.4
4/28/2005	05/09/2005	P103 404.2 ft	Dissolved	37.7 J

U = The analyte was not detected above reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample

STL Groundwater Profile Nickel Results
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Hicksville, NY

Date Sampled	Date Analyzed	Location (depth)	Sample Description	Nickel Data (ug/L)
5/2/2005	05/12/2005	P108 74.15 ft	Dissolved	40 U
5/2/2005	05/12/2005	P108 84.15 ft	Dissolved	40.9
5/3/2005	05/12/2005	P108 84.15 ft DUP	Dissolved	41.7
5/3/2005	05/12/2005	P108 94.15 ft	Dissolved	40 U
5/3/2005	05/12/2005	P108 104.15 ft	Dissolved	40 U
5/3/2005	05/12/2005	P108 114.15 ft	Dissolved	40 U
5/3/2005	05/12/2005	P108 124.15 ft	Dissolved	42.9
5/3/2005	05/12/2005	P108 134.15 ft	Total	40 U
5/3/2005	05/12/2005	P108 134.15 ft	Dissolved	40 U
5/4/2005	05/12/2005	P108 144.15 ft	Dissolved	40 U
5/4/2005	05/12/2005	P108 154.15 ft	Dissolved	40 U
5/4/2005	05/12/2005	P108 164.15 ft	Total	40 U
5/4/2005	05/12/2005	P108 164.15 ft	Dissolved	40 U
5/4/2005	05/12/2005	P108 174.15 ft	Total	40 U
5/4/2005	05/12/2005	P108 174.15 ft	Dissolved	40 U
5/4/2005	05/12/2005	P108 184.15 ft	Total	40 U
5/4/2005	05/12/2005	P108 184.15 ft	Dissolved	40 U
5/4/2005	05/12/2005	P108 192.80 ft	Total	40 U
5/4/2005	05/12/2005	P108 192.80 ft DUP	Total	40 U
5/4/2005	05/12/2005	P108 192.80 ft	Dissolved	40 U
5/4/2005	05/12/2005	P108 192.80 ft DUP	Dissolved	40 U
5/5/2005	05/12/2005	P108 EB1	Dissolved	4.3 J
5/5/2005	05/12/2005	P108 204.60 ft	Dissolved	40 U
5/5/2005	05/12/2005	P108 214.60 ft		40 U
5/5/2005	05/12/2005	P108 214.60 ft	Dissolved	40 U
5/5/2005	05/12/2005	P108 224.60 ft	Total	40 U
5/5/2005	05/23/2005	P108 234.60 ft	Dissolved	40 U
5/6/2005	05/23/2005	P108 244.60 ft	Dissolved	40 U
5/6/2005	05/23/2005	P108 244.60 ft	Total	40 U
5/6/2005	05/23/2005	P108 254.60 ft	Dissolved	40 U
5/6/2005	05/23/2005	P108 254.60 ft	Total	40 U
5/6/2005	05/23/2005	P108 264.60 ft	Dissolved	40 U
5/6/2005	05/23/2005	P108 264.60 ft	Total	40 U
5/9/2005	05/23/2005	P108 293.40 ft	Dissolved	40 U
5/9/2005	05/23/2005	P108 293.40 ft	Total	40 U
5/10/2005	05/23/2005	P108 324.35 ft	Dissolved	40 U
5/10/2005	05/23/2005	P108 324.35 ft	Total	40 U
5/10/2005	05/23/2005	P108 334.35 ft	Dissolved	40 U
5/11/2005	05/23/2005	P108 347.65 ft	Dissolved	40 U
5/12/2005	05/23/2005	P108 359.30 ft	Dissolved	40 U
5/12/2005	05/23/2005	P108 384.30 ft	Dissolved	202
5/12/2005	05/23/2005	P108 384.30 ft DUP	Dissolved	213
5/12/2005	05/23/2005	P108 384.30 ft	Total	221
5/12/2005	05/23/2005	P108 384.30 ft DUP	Total	192
5/12/2005	05/25/2005	P108 394.3 ft	Dissolved	47.1

U = The analyte was not detected above reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample

STL Groundwater Profile Nickel Results
GTEOSI
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Hicksville, NY

Date Sampled	Date Analyzed	Location (depth)	Sample Description	Nickel Data (ug/L)
5/16/2005	05/25/2005	P107 EB1	Dissolved	40 U
5/16/2005	05/25/2005	P107 74.30 ft	Dissolved	40 U
5/16/2005	05/25/2005	P107 74.30 ft	Total	40 U
5/16/2005	05/25/2005	P107 84.30 ft	Dissolved	40 U
5/16/2005	05/25/2005	P107 84.30 ft	Total	40 U
5/17/2005	05/25/2005	P107 94.30 ft	Dissolved	40 U
5/17/2005	05/25/2005	P107 104.30 ft	Dissolved	40.7
5/17/2005	05/25/2005	P107 114.30 ft	Dissolved	40 U
5/17/2005	05/25/2005	P107 114.30 ft DUP	Dissolved	53.4
5/17/2005	05/25/2005	P107 124.30 ft	Dissolved	40 U
5/17/2005	05/25/2005	P107 124.30 ft	Total	40 U
5/17/2005	05/25/2005	P107 134.30 ft	Dissolved	51.3 J
5/17/2005	05/25/2005	P107 134.30 ft	Total	40 UJ
5/17/2005	05/25/2005	P107 144.30 ft	Dissolved	64.5
5/17/2005	05/25/2005	P107 154.30 ft	Dissolved	54.3 J
5/17/2005	05/25/2005	P107 154.30 ft	Total	40 UJ
5/17/2005	05/25/2005	P107 164.30 ft	Dissolved	40 U
5/17/2005	05/25/2005	P107 164.30 ft	Total	40 U
5/17/2005	05/25/2005	P107 174.30 ft	Dissolved	40 U
5/17/2005	05/25/2005	P107 174.30 ft	Total	40 U
5/17/2005	05/25/2005	P107 184.30 ft	Dissolved	40 U
5/17/2005	05/25/2005	P107 184.30 ft	Total	40 U
5/18/2005	05/25/2005	P107 194.30 ft	Dissolved	52.0
5/18/2005	05/25/2005	P107 204.20 ft	Dissolved	60.2 J
5/18/2005	05/25/2005	P107 204.20 ft	Total	48.2 J
5/18/2005	05/25/2005	P107 214.20 ft	Dissolved	40 U
5/18/2005	05/25/2005	P107 214.20 ft	Total	40 U
5/18/2005	05/25/2005	P107 224.20 ft	Dissolved	40 U
5/18/2005	05/25/2005	P107 224.20 ft DUP	Dissolved	40 U
5/18/2005	05/25/2005	P107 224.20 ft	Total	40 U
5/18/2005	05/25/2005	P107 224.20 ft DUP	Total	40 U
5/18/2005	05/25/2005	P107 234.20 ft	Dissolved	40 U
5/18/2005	05/25/2005	P107 234.20 ft	Total	40 U
5/19/2005	05/25/2005	P107 244.20 ft	Dissolved	40 U
5/19/2005	05/25/2005	P107 244.20 ft	Total	40 U
5/19/2005	05/25/2005	P107 254.20 ft	Dissolved	40 U
5/19/2005	05/25/2005	P107 264.20 ft	Dissolved	40 U
5/19/2005	05/25/2005	P107 264.20 ft	Total	40 U
5/19/2005	05/25/2005	P107 274.20 ft	Dissolved	40 U
5/19/2005	05/25/2005	P107 285.80 ft	Dissolved	40 U

U = The analyte was not detected above reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample

STL Groundwater Profile Nickel Results
GTEOSI
Former Sylvania Electric Products Incorporated Facility
Hicksville, NY

Date Sampled	Date Analyzed	Location (depth)	Sample Description	Nickel Data (ug/L)
5/19/2005	06/01/2005	P107 294.2 ft	Dissolved	40 U
5/19/2005	06/01/2005	P107 294.2 ft	Total	40 U
5/20/2005	06/01/2005	P107 316.4 ft	Dissolved	40 U
5/23/2005	06/01/2005	P107 324.1 ft	Dissolved	40 U
5/23/2005	06/01/2005	P107 334.1 ft	Dissolved	39.0 J
5/24/2005	06/01/2005	P107 350.2 ft	Dissolved	18.2 J
5/24/2005	06/01/2005	P107 350.2 ft	Total	51.8
5/24/2005	06/01/2005	P107 359.3 ft	Dissolved	26.4 J
5/24/2005	06/01/2005	P107 371.6 ft	Dissolved	38.4 J
5/25/2005	06/01/2005	P107 378.4 ft	Dissolved	19.3 J
5/25/2005	06/01/2005	P107 378.4 ft	Total	40 U
5/25/2005	06/01/2005	P107 391.5 ft	Dissolved	49.7
5/25/2005	06/01/2005	P107 391.5 ft	Total	120

U = The analyte was not detected above reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample

STL Radionuclide Data - Groundwater Profiles P103, P107 and P108
GTEOSI
Former Sylvania Electric Products Facility
Hicksville, NY

Sample ID	Sample Date	Sample Description	Radiological Results pCi/L											
			Uranium 234				Uranium 235				Uranium 238			
			Result	Uncertainty	MDA	Flag	Result	Uncertainty	MDA	Flag	Result	Uncertainty	MDA	Flag
P-103-74	4/19/2005	Dissolved	28.6	3.1	0.1		1.31	0.4	0.12		26.5	2.9	0.1	
P-103-84.5	4/19/2005	Dissolved	3.39	0.63	0.11		0.15	0.14	0.14	J	3.34	0.62	0.1	
P107-74.30	5/16/2005	Dissolved	95	11	0.2	J	5.1	1.1	0.2		96	11	0.1	
P107-84.30	5/16/2005	Dissolved	52.6	5.5	0.07	J	2.61	0.62	0.14		56.3	5.8	0.1	
P107-94.30	5/17/2005	Dissolved	5.7	1.6	0.4	J	0.1	0.27	0.53	U	6.1	1.6	0.3	
P107-104.3	5/17/2005	Dissolved	8.4	1.9	0.3	J	0.36	0.48	0.32	J	11.6	2.2	0.4	J
P108-74.15	5/2/2005	Dissolved	0.78	0.3	0.2	J	0.1	0.12	0.15	U	0.6	0.25	0.15	J
P108-84.15	5/2/2005	Dissolved	0.7	0.28	0.16	J	0.046	0.092	0.15	U	0.75	0.28	0.16	J
P108-DUP1	5/3/2005	Dissolved	1.32	0.44	0.23	J	0	0	0.2	U	0.95	0.36	0.19	J

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NA = the analyte was not analyzed for

STL Radionuclide Data - Groundwater Profiles P103, P107 and P108
GTEOSI
Former Sylvania Electric Products Facility
Hicksville, NY

Sample ID	Sample Date	Sample Description	Radiological Results pCi/L											
			Thorium 228				Thorium 230				Thorium 232			
			Result	Uncertainty	MDA	Flag	Result	Uncertainty	MDA	Flag	Result	Uncertainty	MDA	Flag
P-103-74	4/19/2005	Dissolved	0.05	0.1	0.16	U	0.12	0.11	0.11	J	0.022	0.061	0.058	U
P-103-84.5	4/19/2005	Dissolved	0.082	0.09	0.097	U	0.21	0.14	0.11	J	0.022	0.061	0.059	U
P107-74.30	5/16/2005	Dissolved	0.07	0.16	0.24	U	0.15	0.14	0.15	U	0	0	0.06	U
P107-84.30	5/16/2005	Dissolved	0.09	0.13	0.18	U	0.19	0.14	0.06	J	0	0	0.1	U
P107-94.30	5/17/2005	Dissolved	NA				NA				NA			
P107-104.3	5/17/2005	Dissolved	NA				NA				NA			
P108-74.15	5/2/2005	Dissolved	0.16	0.26	0.36	U	0.14	0.14	0.16	U	0.017	0.097	0.18	U
P108-84.15	5/2/2005	Dissolved	-0.009	-0.077	0.17	U	0.08	0.11	0.14	U	0.014	0.06	0.13	U
P108-DUP1	5/3/2005	Dissolved	-0.09	-0.18	0.33	U	-0.003	-0.068	0.15	U	-0.016	-0.06	0.13	U

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NA = the analyte was not analyzed for

STL Radionuclide Data - Groundwater Profiles P103, P107 and P108
GTEOSI
Former Sylvania Electric Products Facility
Hicksville, NY

Sample ID	Sample Date	Sample Description	Radiological Results pCi/L							
			Radium 226				Radium 228			
			Result	Uncertainty	MDA	Flag	Result	Uncertainty	MDA	Flag
P-103-74	4/19/2005	Dissolved	0.38	0.18	0.24	J	0.62	0.46	0.74	U
P-103-84.5	4/19/2005	Dissolved	0.19	0.13	0.18	J	0.45	0.44	0.71	U
P107-74.30	5/16/2005	Dissolved	0.22	0.2	0.31	U	0.63	0.51	0.81	U
P107-84.30	5/16/2005	Dissolved	0.19	0.15	0.22	U	0.78	0.52	0.81	U
P107-94.30	5/17/2005	Dissolved	NA				NA			
P107-104.3	5/17/2005	Dissolved	NA				NA			
P108-74.15	5/2/2005	Dissolved	0.06	0.16	0.28	U	0.22	0.36	0.6	U
P108-84.15	5/2/2005	Dissolved	0.27	0.15	0.2	J	0.13	0.35	0.58	U
P108-DUP1	5/3/2005	Dissolved	0.09	0.16	0.28	U	0.3	0.34	0.55	U

U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NA = the analyte was not analyzed for

Boring ID:

MALCOLM PIRNIE, INC.

P-103

17-17 Route 208 North Fair Lawn, NJ 07401

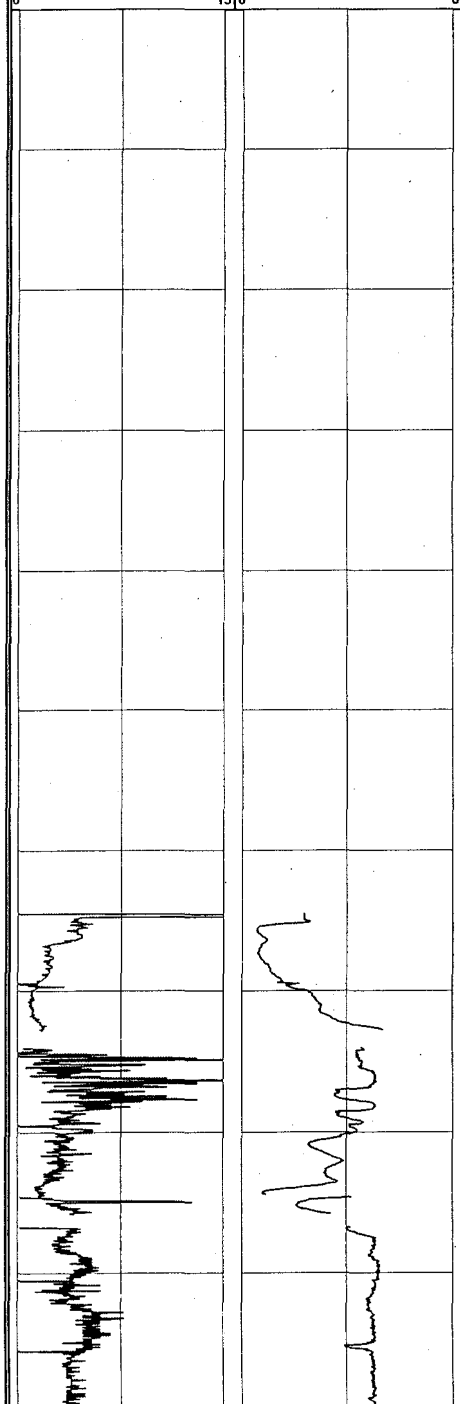
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 18, 2005
JOB NUMBER:	4563001	END DATE:	April 28, 2005
DRILLING FIRM:	CT&E	LOCATION:	GTEOSI Property South of Building 100
DRILLING METHOD:	Mud Rotary		
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Carlin	HYDROGEOLOGIST:	John Hilton

Total depth of Profile: 404.2 ft

Total depth of Boring: 375 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0–15 | Index of Hyd. Conductivity 0–6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
0	Site Backfill			Hollow stem augers used to drill from 0 to 29.5 ft. Begin mud rotary drilling at 29.5 ft.
30	Poorly graded GRAVEL (fine, subrounded) with some sand (fine to medium)	GP - SP		
50	Poorly graded SAND (fine to medium) with trace to little gravel (fine, to 1/4", subrounded); light brown	SP		
60	Poorly graded SAND (fine) with trace to little silt; light brown	SP - SM		
65	Poorly graded SAND (medium) with little silt; light brown to gray brown	SP - SM		Begin profiling at 74'
75	Poorly graded SAND (medium to coarse, sub-angular); light brown to white	SP		Micaceous
90	Poorly-graded SAND (fine); light brown	SP		

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Boring ID:

MALCOLM PIRNIE, INC.

P-103

17-17 Route 208 North Fair Lawn, NJ 07401

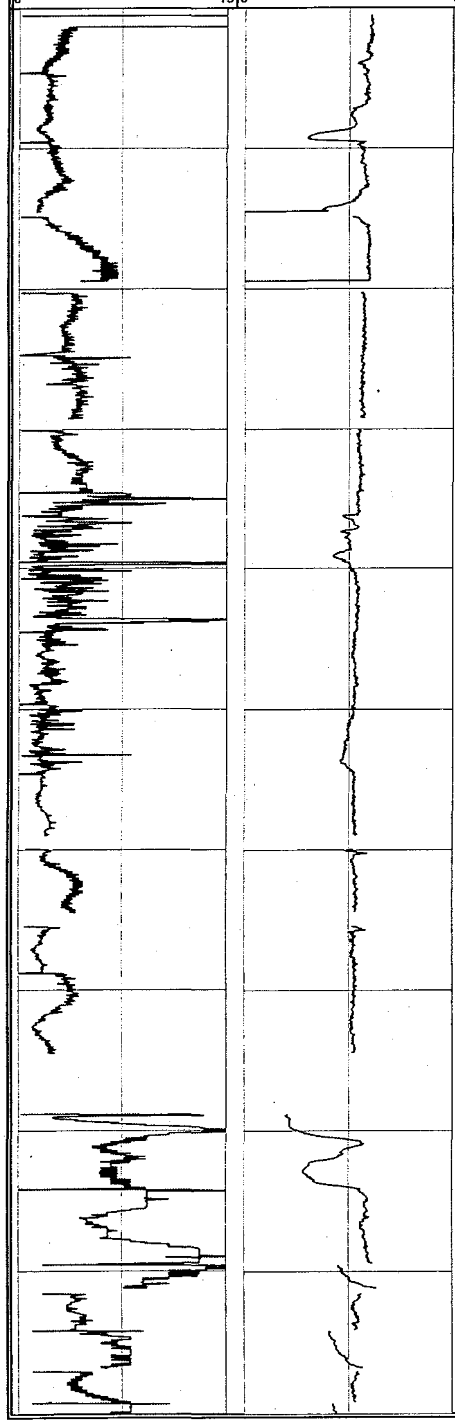
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 18, 2005
JOB NUMBER:	4563001	END DATE:	April 28, 2005
DRILLING FIRM:	CT&E	LOCATION:	GTEOSI Property South of Building 100
DRILLING METHOD:	Mud Rotary		
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Carlin	HYDROGEOLOGIST:	John Hilton

Total depth of Profile: 404.2 ft

Total depth of Boring: 375 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0 – 15 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
100				
105	Poorly graded SAND (medium to coarse, sub-rounded); light brown	SP		
125	Poorly graded SAND (as above) with gravel interbeds (fine, sub-rounded)	SP - GP		
135	Poorly graded SAND (fine to medium) with trace gravel (fine, sub-rounded); light brown to white	SP		
180	Poorly graded SAND (medium to coarse) with trace gravel (fine, to 1/4", sub-rounded); light brown to white	SP		Pulled profiling equipment at 174.5 ft. No penetration rate or IK data from 174.5 to 179.75 due to drilling activities.

Depth scale: 100, 110, 120, 130, 140, 150, 160, 170, 180, 190

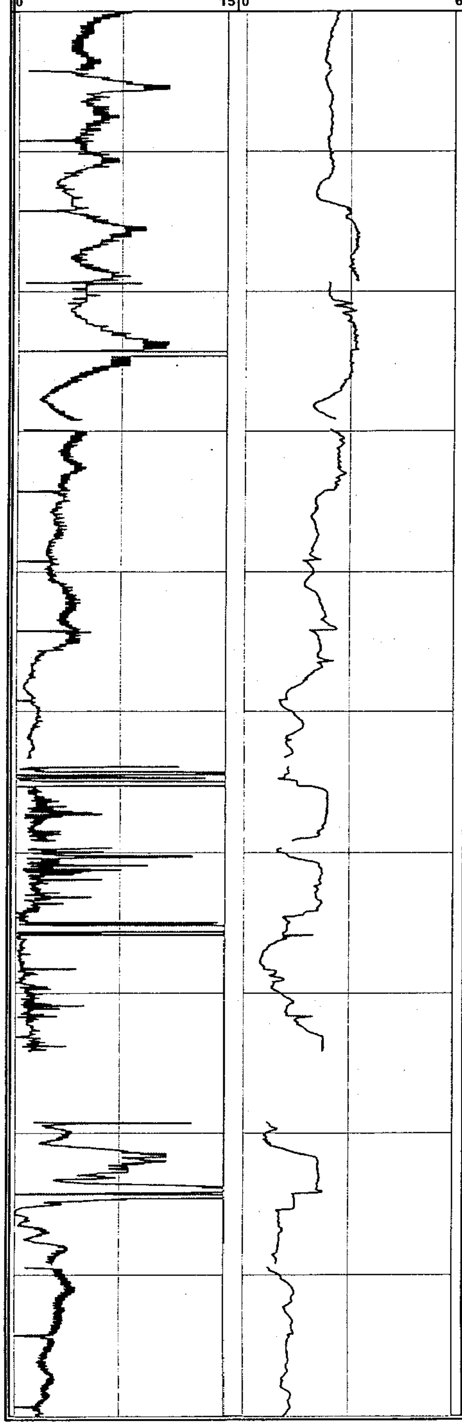
MALCOLM PIRNIE, INC.
17-17 Route 208 North Fair Lawn, NJ 07401

Boring ID: **P-103**

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 18, 2005
JOB NUMBER:	4563001	END DATE:	April 28, 2005
DRILLING FIRM:	CT&E	LOCATION:	GTEOSI Property South of Building 100
DRILLING METHOD:	Mud Rotary		
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Carlin	HYDROGEOLOGIST:	John Hilton
Total depth of Profile:	404.2 ft	Total depth of Boring:	375 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0 – 15 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
200				
210				
220	Poorly graded SAND (fine to medium); light brown to white	SP		
230				
240				
	Poorly graded SAND (fine) with trace to little silt; light brown to white	SP - SM		
250				
260	Poorly graded SAND (fine to medium) trace gravel (fine); pink to orange	SP		
270				Pulled profiling equipment at 274.2 ft. No penetration rate or IK data from 274.2 to 279.5 ft due to drilling activities
280	Poorly graded SAND (medium to coarse) with extensive Fe stained sand (coarse) and gravel (fine) component, trace silt; dark brown-gray to dark gray	SP - GP		
290	Poorly graded SAND (fine to medium, micaceous) with silt partings; medium gray-brown to dark gray	SP - SM		

Boring ID:

P-103

MALCOLM PIRNIE, INC.

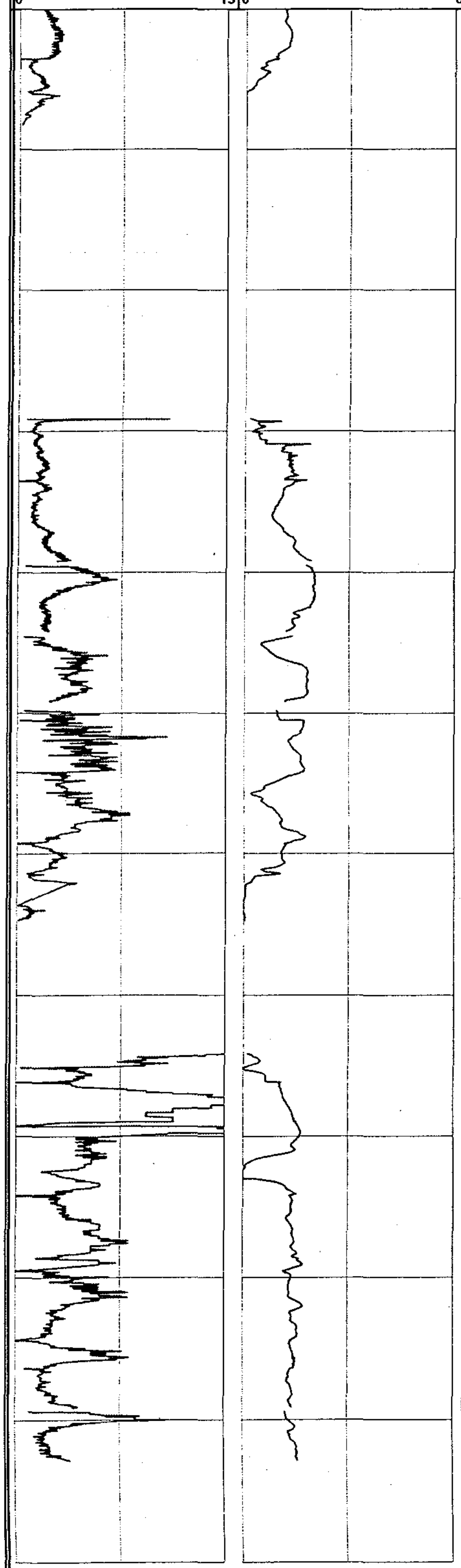
17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 18, 2005
JOB NUMBER:	4563001	END DATE:	April 28, 2005
DRILLING FIRM:	CT&E	LOCATION:	
DRILLING METHOD:	Mud Rotary		GTEOSI Property South of Building 100
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Carlin	HYDROGEOLOGIST:	John Hilton

Total depth of Profile: 404.2 ft

Total depth of Boring: 375 ft

GEOLOGIC INFORMATION



Depth (ft bgs)	USCS Description	USCS Symbol	REMARKS
300	CLAY stratified with silt and SAND (fine) at 300-305'; dark gray brown	CL-SM	Profiler refusal at 308.3 ft. No penetration rate or IK data from 308.3 to 329 ft due to drilling activities.
310	CLAY, dense with interbedded sand lenses; gray white	CL-SC	Clay noted at 305-312' and 317-322'
320			
	Poorly graded SAND/SILT (fine, micaceous) gray white	SM	
330	Poorly graded SAND (fine) with little silt; gray white	SP - SM	
	Poorly graded SAND (As above) with clay; gray white	SC	
340	Poorly graded SAND (fine to medium) with trace to little silt; gray white	SP - SM	
350			
360	Poorly graded SAND (fine) and SILT with trace clay as interbed	SM	
	CLAY (stiff) with lignite, sand interbeds; black brown	CL - SC	Carbonaceous
370			Sand unit at 370'
380			
390			
400			Pulled profiling equipment at 404.2 ft. End of profile.
410			

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Boring ID:

MALCOLM PIRNIE, INC.

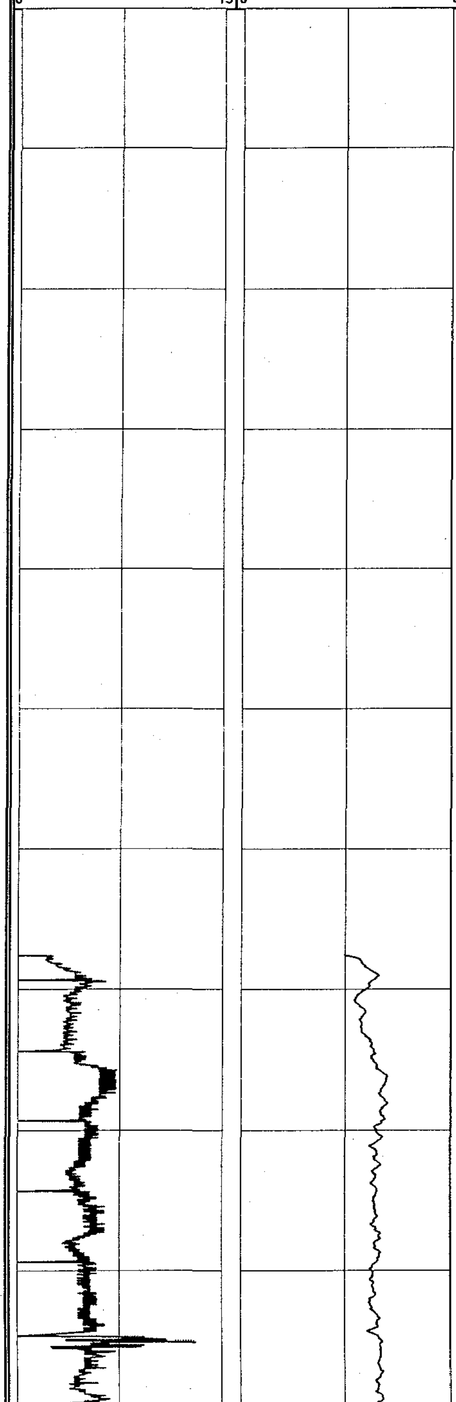
P-107

17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 16, 2005
JOB NUMBER:	4563001	END DATE:	May 26, 2005
DRILLING FIRM:	CT&E	LOCATION:	GTEOSI Property East of Building 100
DRILLING METHOD:	Mud Rotary		
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Lynch	HYDROGEOLOGIST:	Collen Sullivan / John Hilton
Total depth of Profile:	395.5 ft	Total depth of Boring:	350 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0 – 15; Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
0	Site Backfill			
10				
20				Hollow stem augers used to drill from 0 to 14 ft. Begin mud rotary at 14 ft
30				
	Poorly graded SAND (medium) with some gravel (fine, subrounded); light brown	SP		
40				
50	Poorly graded SAND (medium to coarse) with some gravel (fine, subrounded); light brown to tan	SP		
60	Poorly graded SAND (medium) with trace gravel (fine, subrounded); tan	SP		
	Well graded SAND with some gravel (fine, subrounded) trace gravel (medium, rounded); tan	SW		
70				Begin profiling at 74.30'
80				
90	Poorly graded SAND (medium to coarse) with some gravel (fine, subrounded); tan	SP		

Boring ID:

P-107

MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

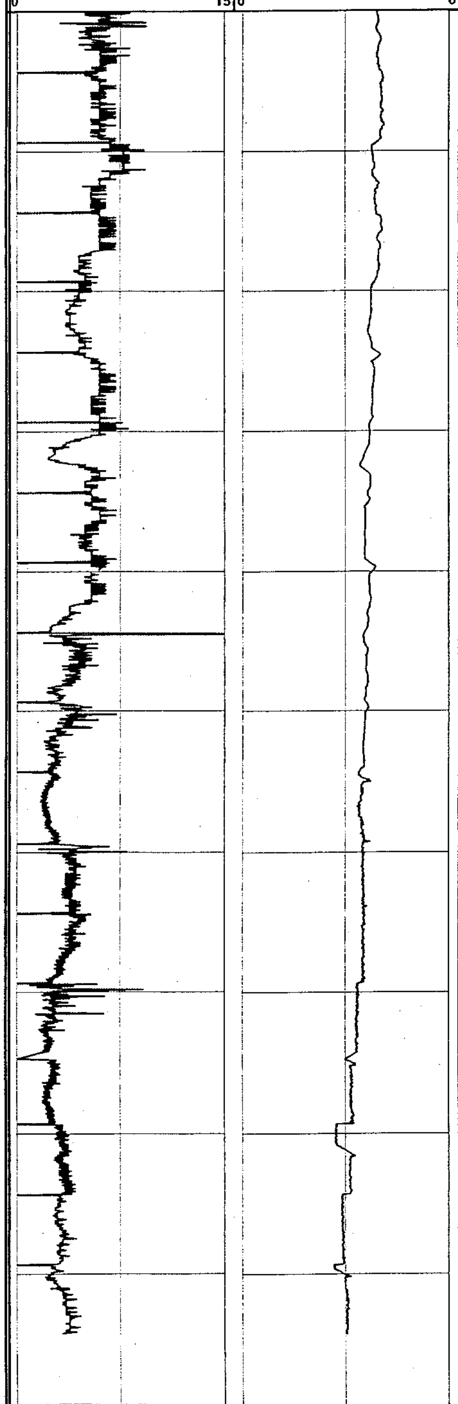
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 16, 2005
JOB NUMBER:	4563001	END DATE:	May 26, 2005
DRILLING FIRM:	CT&E	LOCATION:	GTEOSI Property East of Building 100
DRILLING METHOD:	Mud Rotary		
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Lynch	HYDROGEOLOGIST:	Collen Sullivan / John Hilton

Total depth of Profile: 395.5 ft

Total depth of Boring: 350 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0 – 15 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
100				
110	Poorly graded SAND (medium to coarse) and GRAVEL (fine to medium, subrounded)	SP - GP		
120				
130	Poorly graded SAND (medium to coarse) with some gravel (fine to medium, subrounded); tan to white pink	SP		
140				
150	Poorly graded SAND (medium to coarse) and GRAVEL (fine to medium, subrounded); white pink. Trace Fe stained gravel	SP - GP		
160				
170	Poorly graded SAND (medium) with some gravel (fine to medium, subrounded); tan to white yellow	SP		
180				
190	Poorly graded SAND (medium to coarse) with little gravel (fine, subrounded); tan to white yellow	SP		Pulled profiling equipment at 194.30'. No penetration rate or IK data from 194.30 to 199.25 ft due to drilling operations.

Boring ID:

P-107

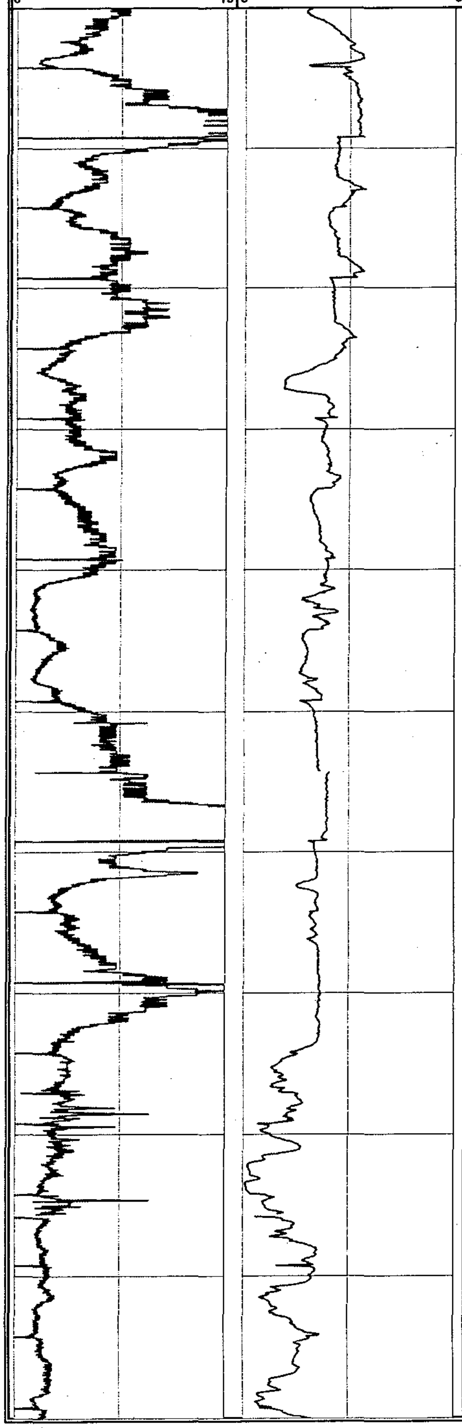
MALCOLM PIRNIE, INC.

17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 16, 2005
JOB NUMBER:	4563001	END DATE:	May 26, 2005
DRILLING FIRM:	CT&E	LOCATION:	GTEOSI Property East of Building 100
DRILLING METHOD:	Mud Rotary		
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Lynch	HYDROGEOLOGIST:	Collen Sullivan / John Hilton
Total depth of Profile:	395.5 ft	Total depth of Boring:	350 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0 – 15 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
200	Poorly graded SAND (medium to coarse) with trace gravel (fine); light gray to white	SP		
210	Poorly graded SAND (medium to coarse) with some gravel (fine, subrounded); light tan to gray	SP		
220				
	Poorly graded SAND (medium to coarse); light gray to white	SP		
230	Poorly graded SAND (coarse) with little gravel (fine); tan to brown	SP		
240	Poorly graded SAND (medium to coarse); red to brown	SP		
250	Well graded SAND and GRAVEL (fine, subrounded); red to brown	SW - GP		
	Well graded SAND and GRAVEL (fine); light tan to brown	SW - GP		
260				Lost circulation of drilling fluids from 260' - 275'. No recovery of cuttings
270				
	Poorly graded SAND (fine) with trace to little silt; gray to white	SP - SM		
280				
	Poorly graded SAND (fine) and SILT with trace clay; gray white to white	SM		
290				

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MALCOLM PIRNIE, INC.
17-17 Route 208 North Fair Lawn, NJ 07401

Boring ID:
P-107

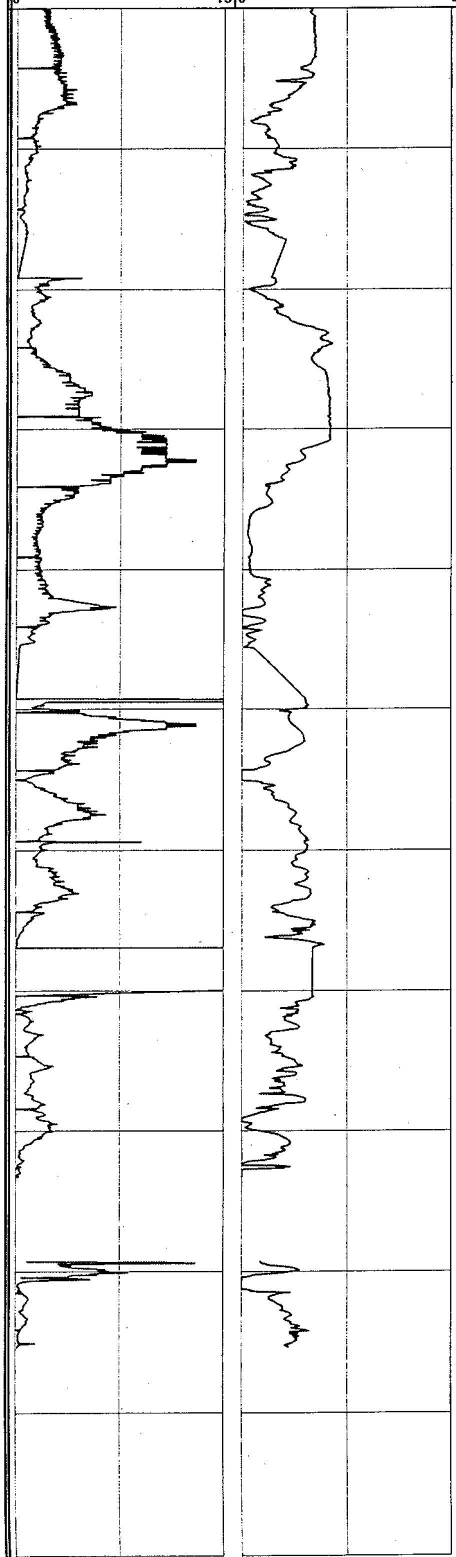
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	May 16, 2005
JOB NUMBER:	4563001	END DATE:	May 26, 2005
DRILLING FIRM:	CT&E	LOCATION:	GTEOSI Property East of Building 100
DRILLING METHOD:	Mud Rotary		
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Lynch	HYDROGEOLOGIST:	Collen Sullivan / John Hilton

Total depth of Profile: 395.5 ft

Total depth of Boring: 350 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0 – 15; Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
300				
310	Well graded SAND and SILT; gray brown to white	SM		Pulled profiling equipment at 316.4. Now penetration rate or IK data from 316.4 to 319.15 due to drilling operations
320	No return: likely silt and fine sand with occasional clay lenses based on drilling characteristics.			
330				
340				Profiler refusal at 345 ft. No penetration rate or IK data from 345 to 349.2 ft due to drilling activities.
350				
360				Profiler refusal at 367.7 ft. No penetration rate or IK data from 367.7 to 369.7 due to drilling activities.
370				
380				Profiler refusal at 383.3 ft. No penetration rate or IK data from 383.3 to 389.3 due to drilling activities
390				Profiler refusal at 395.5. End of profile.
400				
410				

Boring ID:

MALCOLM PIRNIE, INC.

P-108

17-17 Route 208 North Fair Lawn, NJ 07401

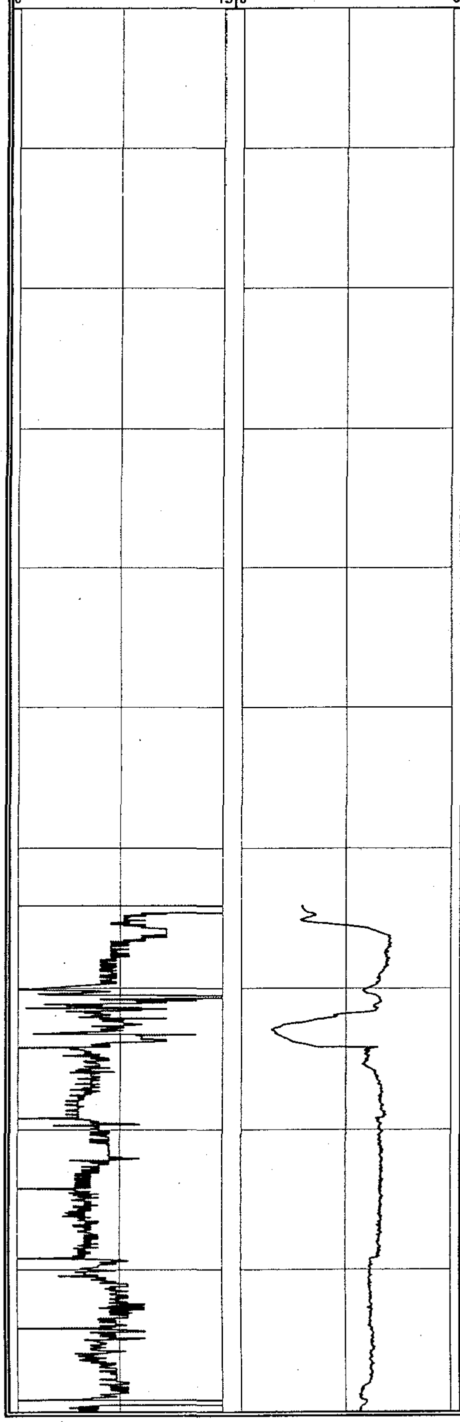
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 29, 2005
JOB NUMBER:	4563001	END DATE:	May 13, 2005
DRILLING FIRM:	CT&E	LOCATION:	GTEOSI Property East of Building 100
DRILLING METHOD:	Mud Rotary		
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Carlin	HYDROGEOLOGIST:	Collen Sullivan

Total depth of Profile: 394.3 ft

Total depth of Boring: 380 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0 – 15; Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
0	Site Backfill			Hollow stem augers used to drill from 0 to 14 ft. Begin mud rotary at 14 ft
	Poorly graded GRAVEL (fine, subrounded) and well graded SAND; light brown	GP - SW		
40	Poorly graded SAND (fine to medium) with some gravel (fine, subrounded); light brown to brown	SP		
50	Poorly graded SAND (fine to medium) and clayey SILT; light brown to yellow	SM		
	Poorly graded SAND (fine to medium) and GRAVEL (fine, subrounded; light brown, yellowish	SP - GP		
60	Poorly graded SAND (fine to medium) with trace gravel (fine); light brown	SP		
	Poorly graded SAND (fine to medium) with trace silt; light brown to dark gray	SP		Begin profiling at 74.15'
80	Poorly graded SAND (fine to medium) with trace gravel (fine, subrounded); light brown	SP		

Depth scale: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90

Boring ID:

MALCOLM PIRNIE, INC.

P-108

17-17 Route 208 North Fair Lawn, NJ 07401

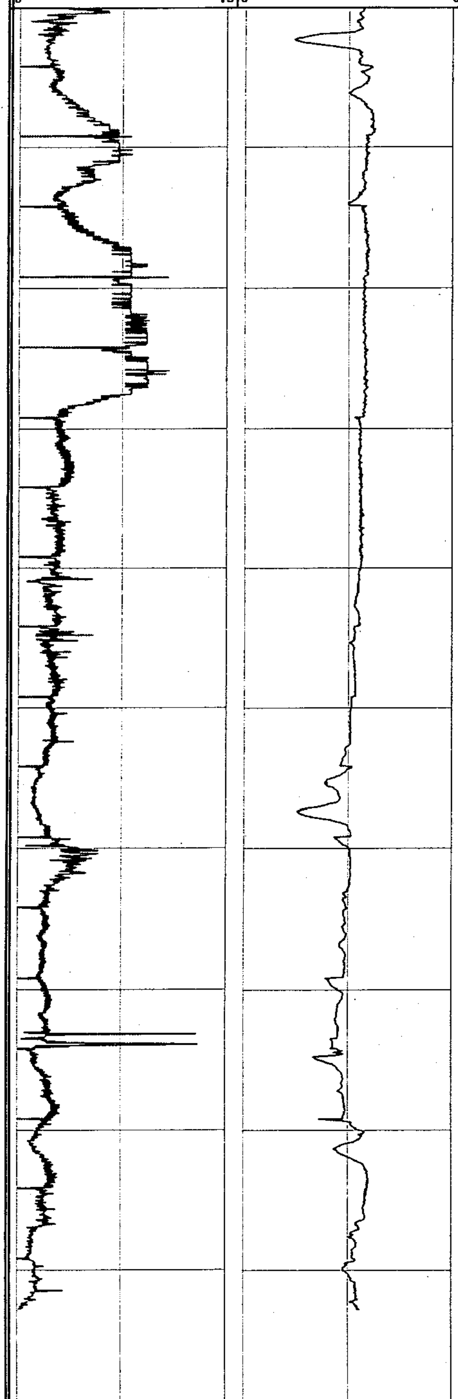
PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 29, 2005
JOB NUMBER:	4563001	END DATE:	May 13, 2005
DRILLING FIRM:	CT&E	LOCATION:	GTEOSI Property East of Building 100
DRILLING METHOD:	Mud Rotary		
DRILLER:	Jim Lewis	DATUM:	Land Surface
HELPER:	Larry Carlin	HYDROGEOLOGIST:	Collen Sullivan

Total depth of Profile: 394.3 ft

Total depth of Boring: 380 ft

GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0–15 | Index of Hyd. Conductivity 0–6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
100	Poorly graded SAND (medium) with trace gravel (fine, subrounded); light brown	SP		
110				
120	Poorly graded SAND (medium to coarse) with trace gravel (fine, subrounded); trace fine sand at 135-140'; light brown to brown	SP		
130				
140	Poorly graded SAND (medium) with trace gravel (fine, subrounded) and trace coarse sand; light brown to brown	SP		
150	Well graded SAND with little gravel (fine, subangular); trace fine sand at 165-170'; light brown	SP		
160				
170	Poorly graded SAND (medium) with trace gravel (fine, subrounded); light brown	SP		
180				
190	Poorly graded SAND (medium to coarse) with little gravel (fine, subrounded); light brown	SP		Profiler refusal at 192.8 ft. No penetration rate or IK data from 192.9 to 200 ft due to drilling activities

2/28/20083:51 PM

Boring ID:

MALCOLM PIRNIE, INC.

P-108

17-17 Route 208 North Fair Lawn, NJ 07401

PROJECT NAME:	GTEOSI-Hicksville	START DATE:	April 29, 2005
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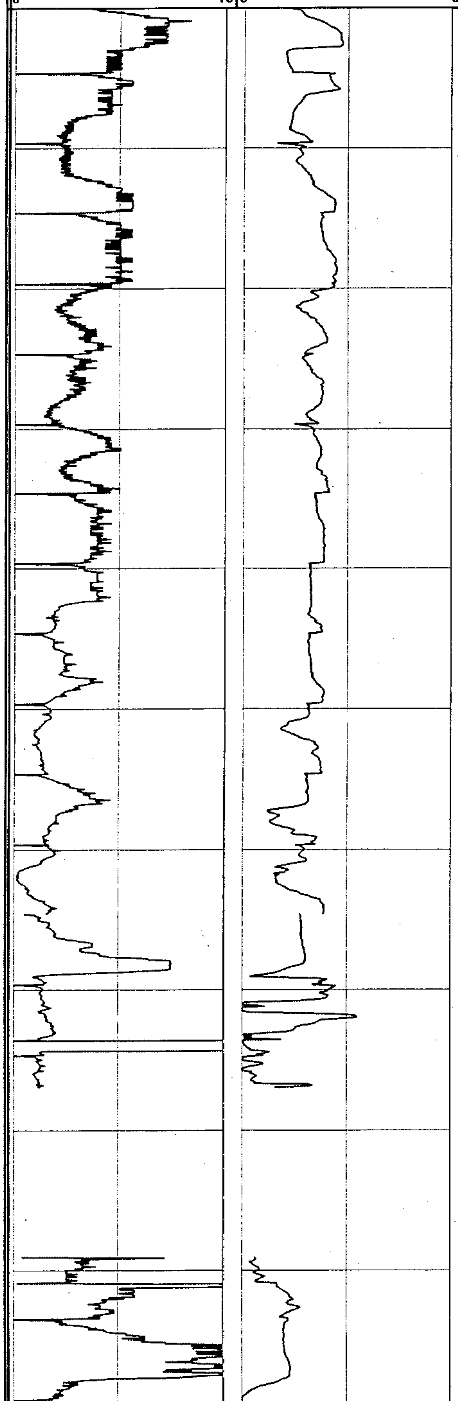
GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0 – 15 | Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
200	Poorly graded SAND (medium to coarse) with some gravel (fine, subrounded); white-orange to tan	SP		
210				
220	Poorly graded SAND (medium to coarse) with trace gravel (fine, subrounded); tan to light brown	SP		
230				
240				
	Poorly graded SAND (medium to coarse) with trace gravel (fine, subrounded) and trace fine sand; pink	SP		
250				
260	Poorly graded SAND (medium) and Fe stained GRAVEL (fine, subrounded) with trace clayey silt; orange-light brown to pink	SP - GP		
	Silty CLAY, thin layers interbedded with poorly graded SAND (medium) and GRAVEL (fine, subrounded); white-dark gray to tan	CL - SP		
270	Poorly graded SAND (fine-medium), with little very fine sand and silt, trace gravel (fine); tan to gray	SP - SM		Pulled profiling equipment at 276.95 ft. No penetration rate or IK data from 276.95 to 289 ft due to drilling activities.
280	Poorly graded SAND (fine) with little silt; gray	SP - SM		
290	Little recovery; Likely poorly graded GRAVEL (medium to coarse)	GP		290-300' Poor recovery. Significant loss of drilling fluid.
	Dense CLAY; brown black	CL		

2/28/20083:51 PM

Boring ID:

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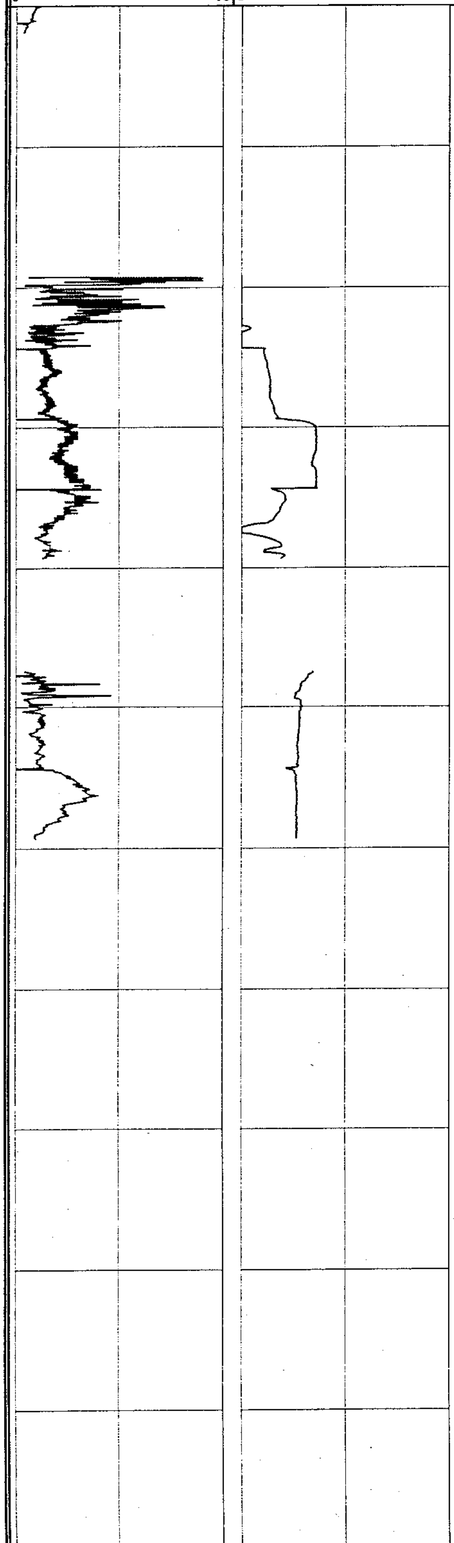
GEOLOGIC INFORMATION

Penetration Rate (ft/sec) 0 – 15; Index of Hyd. Conductivity 0 – 6



Depth (ft bgs)	USCS Description	USCS Symbol	Stratigraphic Column	REMARKS
300				Profiler refusal at 301.9 ft. No penetration rate or IK data from 301.9 to to 319.15 ft due to drilling activities
310	Poorly graded SAND (fine) with soft interbeds of clay, traces of lignite; gray.	SP -SC		Clay layers noted at 311' and 313'
	Poorly graded SAND (fine) with trace mica; gray	SP		
320	Poorly graded SAND (fine) with trace silty clay; gray to white	SP		Invaid IK data from 319.15 to 324.35 due to air in line or plugged Kpro.
330	Poorly graded SAND (fine to medium) with trace coarse sand; gray to white	SP		
340	No recovery. Likely silty SAND based on drilling characteristics	SM		No IK or penetration rate data from 339.35 to 347.65 due to problems with lines and controls.
350				
360				Pulled profiling equipment at 359.30. No IK or penetration rate data from 359.30 to 379.20 ft due to drilling activities.
	No recovery. Likely same as above	SM		Little circulation, poor recovery
370				
380				
390				Pulled profiling equipment at 394.30 ft. End of profile.
400				
410				

Data Usability Summary Report
Volatile Organics
Profiles P-103, P-107, and 108

Former Sylvania Electric Products Facility
GTE Operations Support Incorporated
Hicksville, NY

REPORT

Table of Contents

List of Tables

Executive Summary

This report addresses data quality for groundwater samples collected at the former Sylvania Electric Products Incorporated Facility in Hicksville, New York (the Site). This report pertains to Volatile Organic Compound (VOC) samples collected by Malcolm Pirnie, Inc. (Malcolm Pirnie) from April 18, 2005 through May 26, 2005.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for VOC analysis using United States Environmental Protection Agency (USEPA) guidance methods. A total of 13 samples[1] were submitted, which resulted in 485 VOC results[2]. Of this number, 263 of them are actual sample results[3] and the remainders are field quality assurance/quality control (QA/QC) indicators[4] of the samples. The analytical data generated for this investigation were evaluated by Malcolm Pirnie using the QA/QC criteria established in the methods and USEPA guidelines. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.
- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.
- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Organic Data Review.* EPA 540-R-99-008. October 1999.
- United States Environmental Protection Agency, Region 2. *Contract Laboratory Program* Organics *Data Review.* SOP No. HW-6, Revision #12. March 2001.
- United States Environmental Protection Agency, Region 2. *Standard Operating Procedure for the Validation of Organic Data Acquired Using SW-846 Method 8260B.* SOP No. HW-24, Revision #1. June 1999.

In circumstances where the quality of the data or the accuracy of the results is suspect, the project's Quality Assurance Project Plan (QAPP) and professional judgment[5] were also used to consider if results should be qualified as estimated ("J" or "UJ"). Since individual guidance documents used (as a source of reference for the validation) may differ slightly in the type of qualification applied to data, Malcolm Pirnie applied qualifiers generally with an err to caution. Method non-conformances included exceedances of the relative percent standard deviation for the initial calibrations, the percent differences of the continuing calibrations, and the excessively low response factors in both the initial and continuing calibrations. Results rejected were due to initial and continuing calibration response factor non-conformances.

[1] Total number of samples includes field samples, field duplicates, trip blanks, field blanks, and equipment blanks.
[2] Total number of results includes 481 results for targeted compounds and four results for tentatively identified compounds. This number includes some results, which were rejected by the validation process.
[3] This is the total number of results minus trip blank, field blank, and equipment blank results.
[4] These indicators do not include Matrix Spike/Matrix Spike Duplicate or other internal laboratory QA/QC indicators.
[5] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

Additionally, most laboratory method blanks contained low level contamination from common laboratory contaminants, including acetone and methylene chloride. The presence of these contaminants affected some project samples. Qualification of associated results was performed to show the relationship between the laboratory contamination and the uncertainty of the final sample result. In many cases, the project trip blanks and equipment blank contained low-levels of the same contaminants as were seen in the laboratory method blanks, in addition to other contaminants due to cross-contamination during field sampling activities. Again, Malcolm Pirnie qualified the affected data to show the potential impact on the final sample results.

Other quality issues requiring data validation qualification included replacement of results which exceeded the laboratory calibration range (i.e., qualified with an "E" by the laboratory) with re-analysis results, and qualification of all tentatively identified compounds (TIC). TIC results are qualitative only, and not considered usable for quantitative assessments, in particular risk screening evaluations.

Overall, 96.5 percent[6] of the VOC results retained in the database as final data were determined to be usable for qualitative and quantitative purposes. The other 3.5 percent were qualified as unusable, "R," – the presence or absence of the compounds cannot be verified. Sample results qualified as estimated, "J" and "UJ," due to quality control (QC) deficiencies should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as presented in the QAPP, was met for the VOCs database.

[6] Value = (481 total target compound list data points – 17 rejected TCL data points) / 481 X 100

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples for VOCs collected at the Site by Malcolm Pirnie from April 18, 2005 through May 26, 2005.

The sample delivery group (SDG) number (laboratory package identification number), field identification, and corresponding laboratory identification of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1. *Sample Cross-Reference List*

Package Identification	*Sample ID*	*Laboratory ID*	*Analysis Performed*
F5D220296	P-103-EB#1	F5D220296001	VOCs
	P-103-74	F5D220296002	VOCs
	P-103-174.5	F5D220296012	VOCs
	TRIP BLANK	F5D220296019	VOCs
F5D290261	P-103-344.2	F5D290261013	VOCs
	TB04210428	F5D290261020	VOCs
F5E060294	P108-74.15	F5E060294001	VOCs
	P108-DUP1 (P-108-84.15)	F5E060294003	VOCs
	TB05020505	F5E060294023	VOCs
F5E200169	P-107-74.30	F5E200169003	VOCs
	TB05120519	F5E200169037	VOCs
F5E270218	P-107-324.1	F5E270218007	VOCs
	TB05202605	F5E270218014	VOCs

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report summarizes the findings of the review and outlines any deviations from the applicable quality control (QC) criteria referenced in the following documents:

- New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.

- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Organic Data Review.* EPA 540-R-99-008. October 1999.

- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.

- United States Environmental Protection Agency, Region 2. *Contract Laboratory Program* Organics *Data Review.* SOP No. HW-6, Revision #12. March 2001.

- United States Environmental Protection Agency, Region 2. *Standard Operating Procedure for the Validation of Organic Data Acquired Using SW-846 Method 8260B.* SOP No. HW-24, Revision #1. June 1999.

- URS Corporation. *GTE Operations Support Incorporated - Groundwater Investigation Work Plan, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* QAPP: Appendix C. September 2002.

1.3. Analytical Methods

The environmental samples presented in this report were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for VOC analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW846 Method 5030B: Purge-and-Trap for Aqueous Samples
- SW846 Method 8260B: Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

The laboratory assigned an SDG number to a group of samples during the sample log-in process. The SDG number is the means by which the laboratory tracks samples and QC analyses. A total of 13 samples in a total of five SDGs are included in this data validation report. The SDG, field identification, and laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. Section 3 presents a summary of the findings associated with the validation and a discussion of the specific QA/QC deviations and qualifications performed on the sample data. Section 4 presents a discussion of data completeness and usability. Section 5 presents the Data Usability Summary Report (DUSR) summary information.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidances presented in the QAPP (GTEOSI, 2002), the analytical methodologies, the data validation guidelines referenced in Section 1, and professional judgment[7]. Malcolm Pirnie performed a data review of all analytical results to assess data quality. The data review included an assessment of sample handling protocols and supporting laboratory and field QC parameters. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements
- Analytical methods performed and test method references
- Sample condition - review of log-in records for cooler temperature, absence of headspace, chemical preservation, etc.
- Holding times - comparison of collection, preparation, and analysis dates
- Analytical results - units, values, significant figures
- Sample traceability to raw data
- Instrument tuning
- Initial calibration – comparison to technical guideline criteria
- Continuing calibration – comparison to technical guideline criteria
- Method blank results and laboratory contamination
- Laboratory control sample (LCS) results and comparison to laboratory control limits
- Matrix spike/matrix spike duplicate (MS/MSD) results and comparison to laboratory control limits
- Field replicate/duplicate results and comparison to technical guideline criteria
- Field QC sample (i.e., trip blanks, field blanks, equipment blanks)
- Surrogate standard recoveries and comparison to laboratory control limits
- Internal standards and comparison to technical guideline criteria
- Compound identifications, quantitations, dilutions, and reporting limits
- Tentatively Identified Compounds (TICs)

[7] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

- Electronic Data Deliverables (EDDs) – comparison to the hardcopy analytical

The analytical reports were reviewed for completeness and the accompanying QC data were reviewed for acceptable performance. When QC results indicated poor performance, Malcolm Pirnie applied data qualifiers to the results to inform the data user of the possible performance problem. These qualifiers are in addition to or a revision of the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory for organic analyses:

"U" Non-detect result at the laboratory established reporting limit.

"B" Associated with a result if the compound was also identified in the corresponding method blank.

"J" Indicates an estimated value or a value below the laboratory established reporting limit but above the method detection limit.

"E" This flag identifies compounds whose concentrations exceed the calibration range of the instrument for the specific analysis; data qualified with an "E" are qualitative only and not useable for quantitative purposes. All results qualified with an "E" were required to be re-analyzed using an applicable dilution and re-reported.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

"U" The compound was analyzed for, but was not detected above the reported quantitation limit.

"J" The compound was positively identified; the associated numerical value is the approximate concentration of the compound in the sample.

"N" The analysis indicates the presence of a compound for which there is presumptive evidence to make a "tentative identification".

"NJ" The analysis indicates the presence of a compound that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

"UJ" The compound was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the compound in the sample.

"R" The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the compound cannot be verified.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets Site-specific criteria for data quality and use. It was developed to review and evaluate the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

2. *Have all holding times been met?*

3. *Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?*

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

6. *Have the correct data qualifiers been used?*

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR summary information section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes whether the QA/QC parameters reported, which were specified in Section 2.1, met validation criteria. Summaries of the individual components of the review are described in the following sections.

3.2. Review of Validation Criteria

3.2.1. Completeness Review

The laboratory provided the analytical results using formats based on the Contract Laboratory Program (CLP). Most documents were included in the report packages including a case narrative summarizing the QC issues associated with the project analyses. It should be noted that although the case narratives were included in each SDG, they were indiscriminately written and usually did not contain information relevant to the data reported for this project. They were not relied upon in this data validation. Documents missing from the report packages are detailed in Section 3.2.5.

3.2.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. They included USEPA SW-846 Method 5030B (purge and trap sample introduction) followed by Method 8260B (gas chromatography/mass spectrometry sample analysis). All samples were analyzed using a 25 mL (common volume used is 5 mL) purge volume, which offered lower reporting limits for each compound.

3.2.3. Sample Receipt

The laboratory received 13 water samples for VOC analysis between April 22, 2005 and May 27, 2005. The temperatures within all VOC sample shipment coolers at the time of laboratory receipt were within the recommended temperature range of 4°C ± 2°C. Field and laboratory personnel completed the Chain-of-Custody (COC) documents recording the signature, date, and time of custody transfer. The laboratory recorded the condition of the samples at the time of receipt on a "Conditions Upon Receipt Form." This form identifies whether the containers were received undamaged, within the proper temperature range, at the proper pH, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory.

The following problem with sample receipt was found:

- SDG F5D220296: the trip blank sample was not listed on the COC for analysis. The sample was submitted with the SDG and the laboratory added it onto the COC upon receipt at the laboratory.

There were no custody seals attached to individual sample bottles. No qualification is necessary because the exterior of the shipment coolers had intact custody seals.

3.2.4. Holding Times

The laboratory performed all VOC analyses within the technical holding time of 14 days from date of sample collection. All samples were correctly preserved with acid to a pH of ≤ 2. There were no problems observed.

3.2.5. Analytical Results

For each sample tested, the laboratory provided the analytical test information using formats based on the CLP program. This format requires the use of stylized forms to present critical information pertaining to the analyses performed. For all analytical results, the laboratory provided a "Form I" with the reported analytical results for the requested analyses. The Form I format shows the following information for organic analyses: the laboratory name; the laboratory sample identification; the matrix; the sample identification; the date the sample was received; the date the sample was analyzed; the dilution factor; the chemical abstract service (CAS) number; the units of measure; and the laboratory qualifier (if any).

- SDG F5D290261: sample P-103-344.2 was analyzed twice at the same dilution. It was analyzed the second time because the laboratory had erroneously thought that there was carryover from the previous sample from another client. Both sets of data were submitted; however, for this validation, the second set was not reviewed and is to be ignored.

3.2.6. Traceability to Raw Data

Traceability of the VOC analyses is established by Form V (Instrument Performance Check). These forms list the project samples analyzed per laboratory batch processed and the corresponding QC samples performed with the project samples.

3.2.7. Instrument Tuning

The GC/MS instrument performance (i.e., "tuning data," or a check of mass spectral ion intensities using bromofluorobenzene [BFB]) met method criteria. The instrument performance was checked prior to calibration and once every 12-hour shift for all analytical batches. There were no deficiencies found.

3.2.8. Initial Calibration

Initial Calibrations (ICALs) were performed at seven levels with most compound concentrations from 0.5 ug/L to 30 ug/L. The ICAL performed on 5/19/05 was with six levels with concentrations from 1.0 ug/L to 40 ug/L. Some compounds in the ICALs did not meet data validation criteria [i.e., relative response factors (RRFs) technical criteria of ≥ 0.05, and the percent relative standard deviations (%RSDs) technical criteria of $\leq$ 15%]. For some chemicals with elevated %RSD, the laboratory had employed a linear regression equation to determine the calibration curve. For these chemicals, an acceptable calibration must have the coefficient of the determination (COD) greater than or equal to 0.99 (SW-846 8000B criterion). Table 3-1 shows a summary of the samples and compounds qualified as estimated, "J," or not usable, "R," due to ICAL deficiencies.

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	***Initial Calibration Date***	***Sample ID***	***Compounds***	***Action***
F5D220296	04/20/05, 15:12	P-103-EB#1 P-103-74	RRF: Acetone 2-Hexanone	RRF < 0.05 R – all non-detect results
	04/25/05, 12:39	P-103-174.5	RRF: Acetone 2-Butanone	RRF < 0.05 R – all non-detect results
	05/03/05, 02:09	TRIP BLANK	RRF: Acetone 2-Hexanone	RRF < 0.05 R – all non-detect results
F5D290261	04/25/05, 12:39	P-103-344.2 TB04210428	RRF: Acetone 2-Butanone	RRF < 0.05 R – all non-detect results
F5E060294	05/05/05, 14:38	P108-74.15 P108-DUP1 TB05020505	RRF: Acetone 2-Butanone	RRF < 0.05 R – all non-detect results J – all positive results

Table 3-1. *Evaluation of Initial Calibration Results*

Package Identification	*Initial Calibration Date*	*Sample ID*	*Compounds*	*Action*
F5E200169	05/19/05, 12:02	P-107-74.30 TB05120519	None	None
F5E270218	05/24/05, 03:15	P-107-324.1 TB05202605	RRF: Acetone	RRF < 0.05 R – all non-detect results J – all positive results

3.2.9. Continuing Calibration

The continuing calibration (CCAL) verification analyses were performed with a mid-level standard immediately following the tuning check at the beginning of each 12-hour analytical sequence. Some compounds in the CCAL verification analyses did not meet data validation criteria (i.e., RRFs technical criteria of ≥ 0.05, and the percent differences (%Ds) from the average RRF technical criteria of ≤ 20%). For chemicals that had employed a linear regression equation to determine the calibration curve, the % drift in the CCAL must be within ± 15% (SW-846 8000B criterion). Table 3-2 shows a summary of the samples and compounds qualified as estimated, "J," or not usable, "R," due to CCAL deficiencies.

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F5D220256	04/29/05, 11:40	P-103-EB#1 P-103-74	% D: Acetone RRF: Acetone 2-Hexanone	%D > 20% UJ – all non-detect results RRF < 0.05 R – all non-detect results
	05/02/05, 14:13	P-103-74 DL P-103-174.5	% D: Bromomethane 2-Butanone 1,2-Dichloroethane Bromodichloromethane 4-Methyl-2-pentanone Tetrachloroethene Dibromochloromethane 2-Hexanone Bromoform RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results
	05/05/05, 10:38	TRIP BLANK	% D: 2-Hexanone RRF: Acetone 2-Hexanone	%D > 20% UJ – all non-detect results RRF < 0.05 R – all non-detect results
F5D290261	05/04/05, 15:14	P-103-344.2 TB04210428	% D: Bromomethane 4-Methyl-2-pentanone Tetrachloroethene 2-Hexanone RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 R – all non-detect results

Table 3-2. *Evaluation of Continuing Calibration Results*

Package Identification	*CCAL Date*	*Sample ID*	*Compounds*	*Action*
F5E060294	05/09/05, 11:17	P-108-74.15 P-108-DUP1	RRF: Acetone 2-Butanone	RRF < 0.05 R – all non-detect results
	05/10/05, 15:27	P-108-74.15 DL P-108-DUP1 DL		None
	05/16/05, 20:34	TB05020505	% D: Acetone Methylene chloride 2-Butanone 4-Methyl-2-pentanone 2-Hexanone RRF: Acetone 2-Butanone	%D > 20% UJ – all non-detect results J – all positive results RRF < 0.05 J – all positive results
F5E200169	05/24/05, 13:08	P-107-74.30 TB05120519	% D / % Drift: Chloromethane Bromomethane Acetone Tetrachloroethene	%D > 20%, % Drift > 15% UJ – all non-detect results J – all positive results
F5E270218	05/29/05, 17:06	P-107-324.1 TB05202605	% D: Chloromethane	%D > 20% UJ – all non-detect results

Note:
DL Suffix – Indicates a secondary diluted sample reanalysis

3.2.10. Laboratory Method Blanks

In general, most laboratory method blanks contained trace levels of one or more common laboratory contaminants. The corresponding sample results for the identified contaminants were revised to non-detect results if these results were "less than five times" (< 5 X) the method blank results for laboratory contaminants in accordance with the QAPP (GTEOSI, 2002). However, per National Functional Guidelines (EPA 540-R-99-008), common laboratory contaminants (methylene chloride, acetone, 2-butanone, and cyclohexane) criterion is "< 10 X" the method blank results. The National Functional Guidelines' criterion was also used. Most samples were affected by these qualification guidelines. A summary of the samples and compounds that were revised due to laboratory contamination are presented in Table 3-3.

Table 3-3. *Evaluation of Laboratory Method Blank Results*

Package Identification	*Sample ID*	*Compounds*	*Action*
F5D220296	TRIP BLANK	Methylene chloride	Removed "B" qualifier. No need to qualify TB with MB
F5D290261	P-103-344.2	1,4-Dichlorobenzene 1,2-Dichlorobenzene Chlorobenzene	Revise "B" qualifier to "U" to indicate non-detect result
	TB04210428	1,4-Dichlorobenzene 1,2-Dichlorobenzene Chlorobenzene	Removed "B" qualifier. No need to qualify TB with MB
F5E060294	P108-74.15	Tetrachloroethene	Removed "B" qualifier. Blank concentration < 5X of sample
	P108-DUP1	Tetrachloroethene	Removed "B" qualifier. Blank concentration < 5X of sample
	TB05020505	Acetone	Removed "B" qualifier. No need to qualify TB with MB

Table 3-3. *Evaluation of Laboratory Method Blank Results*			
Package Identification	***Sample ID***	***Compounds***	***Action***
F5E200169			None
F5E270218			None

3.2.11. Laboratory Control Sample Results

The laboratory analyzed a laboratory control sample (LCS) for each day of sample analysis. Most LCS percent recoveries were within the laboratory control limits for each of the batches. Generally, for recoveries exceeding laboratory control limits substantially, the associated data would be qualified as estimated ("J" or "UJ") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results are qualified as estimated; non-detects are not qualified; 2) if the percent recovery was below the lower control limit, both positive and non-detect results are qualified as estimated. For compounds that were slightly out, but were within the method default range of 70% to 130%, they were not qualified based on professional judgment. Table 3-4 shows the evaluation of LCS samples.

Table 3-4. *Evaluation of Laboratory Control Sample Results*				
Package Identification	***LCS Date***	***Sample ID***	***Compound(s) Out***	***Action***
F5D220296	04/29/05		None	None
	05/02/05		None	None
	05/05/05		None	None
F5D290261	05/04/05		None	None
F5E060294	05/09/05		None	None
	05/10/05		None	None
	05/16/05	TB05020505	4-Methyl-2-pentanone	None (high %R but not detected in samples)
F5E200169	05/24/05		None	None
F5E270218	05/29/05		None	None

3.2.12. Matrix Spike/Matrix Spike Duplicate Analyses

The MS/MSD analyses are designed to provide information about the effect of sample matrix on the sample preparation procedures and the measurement methodology. Data precision from the field sampling and the analytical techniques can also be assessed.

Only the associated non-spiked MS/MSD samples were evaluated for qualification (unless a trend can be determined for all other samples within the SDG). Where recoveries exceeded laboratory control limits, the associated data are qualified as estimated ("J" or "UJ") using the following validation guidance: 1) if the percent recovery was greater than the upper control limit, positive results are qualified as estimated; 2) if the percent recovery was below the lower control limit, both positive and non-detect results are qualified as estimated. No qualification of data is required when percent recoveries are above the upper control limit and the VOC results are non-detect. However, there were no MS/MSDs submitted that were relevant to the samples of this project.

- SDGs F5D220296, F5D290261, F5E060294, and F5E270218: the MS/MSDs were performed on samples from other clients of the laboratory. Matrix effect of the samples for accuracy and precision was not evaluated because those MS/MSDs offer no pertinent information on matrix effects of field samples from this project.

- SDG F5E200169: an MS/MSD set was analyzed for sample P-107-74.30. However, the laboratory had analyzed the sample and the MS/MSD at 10X dilution. The dilution was unnecessary. The laboratory subsequently reanalyzed the sample with no dilution but did not reanalyze the MS/MSD. Therefore, the diluted MS/MSD was not evaluated because it did not represent the undiluted matrix of the sample. In addition, the laboratory had noted that there was a problem with the spiking solution which resulted in poor recoveries.

- SDGs F5E060294 and F5E200169: the MS/MSDs were also performed on laboratory water, as the LCS and LCS duplicate; they offer no information on matrix effects of the actual field samples.

Table 3-5 shows the samples and compounds that were qualified as estimated due to MS/MSD percent recoveries exceeding criteria.

Table 3-5. *Evaluation of Matrix Spike/Matrix Spike Duplicate Sample Results*

Package Identification	***Sample ID***	***Compounds***	***Action***
Not Evaluated			None

3.2.13. Field Duplicate Analyses

Blind field duplicate samples were supposed to be collected and analyzed to assess the overall sampling and analytical technique's precision. And by design, the laboratory was never made aware of which field samples the blind duplicates were associated with. However, there were no field duplicates submitted for assessment.

- SDG F5E060294: sample P-108-DUP1 is a blind field duplicate of sample P-108-84. However, the original sample, P-108-84, was not submitted to the laboratory for analysis. Therefore, the duplicate sample is considered the original sample and duplicate evaluation could not be performed.

There were no field duplicates submitted with SDGs F5D220296, F5D290261, F5E060294, F5E200169, and F5E270218. It should be noted that QAPP requirements (GTEOSI, 2002) specified that a field duplicate sample be collected at a rate of one sample for every ten samples (collection rate of 10%). There were no field duplicates collected for the seven field samples submitted (not including blank samples collected as QCs) for analysis. Therefore, the frequency is not satisfied and field precision is not considered to have been evaluated to the QAPP's requirements.

3.2.14. Trip Blanks, Field Blanks, and Equipment Blanks

Five trip blanks, no field blanks, and one equipment blank were submitted for analysis. Many of the trip blanks that were submitted contained common contaminants. Revisions made on the affected target compound results were based on trip blank and equipment blank contamination, in accordance with practices described in the validation guidance documents listed in Sections 1.2 and 3.2.10 (method blank contamination). It should be noted that the results for the trip blanks and equipment blank were not revised with respect to the method blank's contamination; but the original result were retained to show data users the presence and concentrations of contamination that was used to qualify the project sample results. The laboratory's "B" qualifiers in the trip blanks and equipment blank were removed. The contamination in the trip blanks and equipment blank, like the project samples, is potentially attributable to contamination from sample collection techniques in the field, cross-contamination from samples during shipment, or contamination during the preparation and analysis of these QC samples (at the laboratory).

There were no field blanks or equipment blanks submitted with SDGs F5D290261, F5E060294, F5E200169 and F5E270218. Equipment blanks were evaluated against the groundwater profiler location samples. Therefore, SDG F5D290261 used the equipment blank submitted with F5D220296. There was no equipment blank or field blank associated with groundwater profiler location P-108 or P-107. However, a trip blank was submitted with each SDG.

Table 3-6 shows the samples and compounds that were qualified as non-detect, "U."

Table 3-6. *Evaluation of Trip Blank, Field Blank, and Equipment Blank Results*

Package Identification	***Sample ID***	***Compound***	***Action***
F5D220296	P-103-74	Carbon Disulfide	Revised result to "U" (non-detect)
F5D290261	P-103-344.2	Chloroform 1,4-Dichlorobenzene* 1,2-Dichlorobenzene* Chlorobenzene*	Revised result to "U" (non-detect)
F5E060294			None
F5E200169			None
F5E270218			None

Note:
* - Also qualified due to method blank contamination

In addition to the above, the following actions were also performed.

- SDG F5E060294: Sample P-108-74.15 – 1,2-Dichlorobenzene was detected at a concentration of 1.3 ug/L. It was also detected in its associated trip blank at 0.10 J ug/L. A small peak was present in the method blank at the elution time of 1,2-dichlorobenzene, so a request for additional information was made to the laboratory. It was determined that 1,2-dichlorobenzene was also present in the method blank at a concentration of 0.12 J ug/L. Based on other project samples and on professional judgment, the result for 1,2-dichlorobenzene in this sample will be qualified as a false positive and the concentration will be changed from 1.3 ug/L to 1.3 U ug/L.
- SDG F5E060294: Sample P-108-84.15 – 1,2-Dichlorobenzene was detected at a concentration of 0.56 ug/L. It was also detected in its associated trip blank at 0.10 J ug/L. A small peak was present in the method blank at the elution time of 1,2-dichlorobenzene, so a request for additional information was made to the laboratory. It was determined that 1,2-dichlorobenzene was also present in the method blank at a concentration of 0.12 J ug/L. Since the method blank concentration is right at one-fifth the concentration of the sample concentration, the result for 1,2-dichlorobenzene in this sample will be qualified as a false positive and the concentration will be changed from 0.56 J ug/L to 1.0 U ug/L.

3.2.15. System Monitoring Compounds

All percent recoveries for the VOC surrogates were within laboratory control limits. There were no deficiencies found.

3.2.16. Internal Standards

All internal standard retention times were within ± 0.5 minutes from that of the associated calibration for all analyses. The responses of all internal standards were within the range of 50-200% of the associated calibration verification for all samples. There were no deficiencies found.

3.2.17. Compound Identification and Quantitation of Results / Dilutions

The laboratory's evaluations of the gas chromatographs and mass spectra for the identified compounds were acceptable with the exception.

- SDG F5D290261: Sample P-103-344.2 - carbon tetrachloride and 1,1,1-trichloroethane was both reported and had been detected at the same retention time. It is determined that co-elution did not occur and that the peak was 1,1,1-trichloroethane. Therefore, carbon tetrachloride is a false positive and the concentration will be changed to the non detected value of 1.0 U ug/L.
- SDG F5E060294: Sample P-108-74.15 – benzene was detected at a concentration of 0.085 ug/L. Since the concentration was substantially below the reporting limit, and it cannot be confirmed if benzene was also present at a similar low level in the blanks, the presence of benzene will be qualified as estimated, "N," in additional to its estimated value, "J." Therefore, the result for benzene will be changed from 0.085 J ug/L to 0.085 JN ug/L.
- SDT F5E200169: Sample P-107-74.30 – carbon tetrachloride was detected in the sample at 1.7 ug/L. Although an acceptable linear regression calibration was used to calculate the concentration, the calibration curve does not appear to produce accurate results at low concentrations. If the average relative response factor was used instead of a linear regression equation, a %RSD of 23.8 would be calculated for the initial calibration, which would result in a sample concentration that is qualified as estimated. Using the average RRF, the concentration of carbon tetrachloride would be 0.017 J µg/L, a very low but more likely concentration than 1.7 J µg/L, based on the low area count. Since it is believed, based on professional judgment, that the estimated concentration is near but above the true minimum level of detection and that "blank contamination" may be possible but cannot be confirmed near that level, the presence of carbon tetrachloride will be qualified as tentative, "N." Consequently, the result for carbon tetrachloride will be changed from 1,7 µg/L to 0.017 JN µg/L.

Some samples contained elevated concentrations of target compounds that exceeded the calibration range for the VOC analysis. The laboratory reported and qualified these results with an "E" qualifier. As part of the laboratory's corrective action, the affected samples were reanalyzed at a dilution to obtain usable results within the established calibration curve range. As part of this validation, specific compound results, which exceeded the calibration range in the original analysis, were replaced with the compound results from the secondary dilution analysis. The sample results, in effect, are made whole when the initial and secondary analyses are "hybridized," into one. A list of the re-analyzed samples and the affected compounds are listed in Table 3-7.

Table 3-7. *Summary of Laboratory Re-Analyses*

Package Identification	*Sample ID*	*Compound Reported From Re-Analysis*

Table 3-7. *Summary of Laboratory Re-Analyses*

Package Identification	***Sample ID***	***Compound Reported From Re-Analysis***
F5C220296	P-103-74	Tetrachloroethene
F5E060294	P108-74.15	cis-1,2-Dichloroethene Tetrachloroethene Trichloroethene
	P108-DUP1	cis-1,2-Dichloroethene Tetrachloroethene Trichloroethene

SDG: F5E060296: cis-1,2-dichloroethene and trichloroethene were diluted for in samples P-108-74.15 and P-108-DUP1. However, the dilution of the diluted sample was so excessive that the raw diluted results were either not detected or below the reporting limit. Therefore, the original values were kept for these compounds and qualified as estimated, "J."

SDG F5E200169: samples P-107-74.30 and TB05120519 were initially analyzed a dilution of 10X. The laboratory subsequently reanalyzed the samples with no dilution after realizing that dilutions were not necessary. Therefore, the diluted analyses are to be ignored.

Table 3-8 lists the samples that were analyzed diluted without an undiluted analysis. This table is not applicable because all diluted analyses had associated undiluted analyses.

Table 3-8. *Summary of Samples Analyze Diluted Without an Undiluted Analysis*

Package Identification	***Sample ID***	***Initial Dilution***
Not applicable		

3.2.18. Tentatively Identified Compounds (TICs)

The laboratory was required to perform library searches for TICs present in the samples and QC matrices for the VOC analyses. Since the TIC evaluation provides only the identity of a possible compound in the matrix and not the actual concentration of a compound, all TIC data should be considered tentatively qualitative (i.e., not usable for quantitative purposes). The "N" qualifier was added to all TIC results to indicate to the data user that the compound identifications are tentative. The "J" qualifier was added to all TIC results to indicate to the data user that the values are estimated.

- SDG F5D290261: a TIC was detected in sample TB04210428 at 11.682 minutes. Upon closer inspection, this compound was also detected in sample P-103-344.2, which was analyzed immediately before it. The TIC detection in TB04210428 is determined to be a carry-over, and the same TIC in sample P-103-344.1 is determined not to be a result of contamination. The reanalysis of these two samples on 5/09/05, which were not evaluated, confirmed this.

- SDG F5E060294: a TIC was detected in sample P-108-74.15 at 11.69 minutes. The laboratory failed to report it. The TIC has been reported as a result of this data validation effort.

The TICs identified in the project and laboratory QC samples (d-limonene and a substituted cyclohexene) are tabulated for inclusion in tables in the associated Groundwater Investigation Report.

3.2.19. Electronic Data Deliverables

The results in the electronic database matched results listed on the hardcopy analytical report including laboratory qualifiers. The qualifiers and results were revised based on quality control issues; and foundation for changes are listed in previous sections of this DUSR. The qualifiers were also placed onto the reporting forms located near the beginning of each hardcopy deliverable package (i.e., SDG package).

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 96.5 percent[8] of the VOC data (individual compound results) were determined to be usable for qualitative and quantitative purposes. The other 3.5 percent were qualified as rejected – the presence or absence of the compounds cannot be verified. Those sample results qualified as estimated, "J" and "UJ," due to QC deficiencies should be considered conditionally usable. TIC identifications are only presumptive evidence of the compound's presence, and are qualified with "N."

The samples collected from the Site were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, in the data validation guidelines listed in Section 1.2, on the QAPP (GTEOSI, 2002) established for this project, and by professional judgment[9]. Major deficiencies in the data generation process have resulted in some sample data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process have resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate, "J," indicates uncertainty in the reported concentration or detection limit of the chemical, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters. Completeness has been discussed above.

Precision is measured through the evaluation of field duplicate samples. For the VOC analyses, precision was not evaluated because there were no field duplicate samples to evaluate. The frequency of duplicates should have been at a minimum of 10 percent as presented in the QAPP.

LCS, MS, and MSD recoveries indicate the accuracy of the data. For the VOC analyses, none of the data were rejected due to LCS deficiencies. However, MS/MSD recoveries were not evaluated because there were no MS/MSD data that were relevant to this project. Therefore, accuracy of the data was not evaluated.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. There were some VOC data qualified as false-positives due to field and/or laboratory contamination. Details are summarized within Section 3.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. Sensitivity requirements were not met for several project samples due to excessively poor compound responses in the initial and continuing calibrations performed. All of the VOC data rejected were due to this sensitivity non-conformance.

[8] Value = (481 total target compound list data points – 17 rejected TCL data points) / 481 X 100
[9] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets Site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data packages. The following questions were addressed:

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

   The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. *Have all holding times been met?*

   The holding times were met for all VOC samples. There were no problems observed.

3. *Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?*

   The laboratory used laboratory control limits. QC deviations and qualifications performed on the sample data are discussed in Section 3. There were no matrix spike/matrix spike duplicate or field duplicate analyses suitable for evaluation. Major non-conformances were observed with initial and continuing calibrations and with sample conditions upon receipt – 3.5 percent of all data were qualified as not usable.

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

   The QAPP required that USEPA guidance methods be used in the analysis of the samples. The laboratory used the required method. Some samples had results which were over diluted.

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

   The evaluation of selected raw data confirmed most information provided in the data packages. One chemical in one sample was falsely identified and another chemical in another sample had a detected concentration that cannot be correct due to the usage of a linear regression equation.

6. *Have the correct data qualifiers been used?*

   The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines listed in Section 1. The laboratory and validation qualifier definitions are listed in Section 2.2.

References

New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.

United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Organic Data Review.* PA 540-R-99-008. October 1999.

United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.

United States Environmental Protection Agency, Region 2. *Contract Laboratory Program Organics Data Review.* SOP No. HW-6, Revision #12. March 2001.

United States Environmental Protection Agency, Region 2. *Standard Operating Procedure for the Validation of Organic Data Acquired Using SW-846 Method 8260B.* SOP No. HW-24, Revision #1. June 1999.

URS Corporation. *GTE Operations Support Incorporated - Groundwater Investigation Work Plan, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* QAPP: Appendix C. September 2002.

Data Usability Summary Report
Metal
Profiles P-103, P-107, and 108

Former Sylvania Electric Products Facility
GTE Operations Support Incorporated
Hicksville, NY

REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected at the former Sylvania Electric Products Incorporated Facility in Hicksville, New York (the Site). This report pertains to "metals" samples collected by Malcolm Pirnie, Inc. (Malcolm Pirnie) from April 18, 2005 through May 25, 2005.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for metals analyses using United States Environmental Protection Agency (USEPA) guidance methods. A total of 97 samples[1] were submitted, which resulted in 138 nickel results[2]. Of this number, 135 of them are results[3] of actual samples and the remainders are field quality assurance/quality control (QA/QC) indicators[4] of these samples. The quality of the analytical data generated for this investigation were evaluated by Malcolm Pirnie using the QA/QC criteria established in the methods and USEPA guidelines. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the following references:

- New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.
- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* EPA 540-R-01-008, July 2002.
- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.
- United States Environmental Protection Agency, Region 2. *Validation of Metals for the Contract Laboratory Program based on SOW ILM05.3.* SOP No. HW-2, Revision 13. September 2006.
- URS Corporation, GTE Operations Support Incorporated (GTEOSI). *Groundwater Investigation Work Plan (QAPP: Appendix C), Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* URS, September 2002.

In circumstances where the quality of the data or the accuracy of the results is suspect, the project's Quality Assurance Project Plan (QAPP) and professional judgment[5] were also used to consider if results should be qualified as estimated ("J" or "UJ"). Since the individual guidance documents used (as a source of reference for the validation) differ somewhat in the type of qualification applied to data, Malcolm Pirnie applied qualifiers generally with an err to caution. All instrument calibration analyses, laboratory control sample analyses, serial dilution analyses, and interference check sample analyses were acceptable.

There were some laboratory initial calibration blanks, continuing calibration blanks, and method blanks, that contained low concentrations of nickel. The presence of nickel in specific blanks affected many project samples. Qualification of associated results was performed to show the relationship between the laboratory contamination and the uncertainty of the actual project sample results.

[1] Each sample may have been analyzed for total recoverable and/or dissolved fractions.
[2] This is the number of results reported by the laboratory on their Sample Results reporting form (Form 1).
[3] This is the total number of well data points, which may include total recoverable and dissolved fractions including duplicate sample results.
[4] These indicators do not include Matrix Spike/Matrix Spike Duplicate or other internal laboratory QA/QC indicators.
[5] Professional judgment is performed by a USEPA certified data validator with over a decade of environmental laboratory experience.

Equipment/field blanks and matrix spike samples were not performed for all sample batches; however, they were performed for each of the groundwater profiler locations. The relative percent differences (RPD) between eight (8) field duplicate pair results were performed and assessed (five for dissolved nickel and three for total nickel). This is equivalent to a field duplicate sample collection rate of 6.3 percent[6]. Based on the QAPP, the rate should have been 10 percent. With 127 discrete field sample data values[7], 13 field duplicate data should have been performed. Therefore, evaluation of precision could not be evaluated adequately.

None of the exceedances of method non-conformances were significant enough to jeopardize the usability of the data. Overall, 100 percent[8] of the metals data were determined to be usable and/or conditionally usable for qualitative and quantitative purposes. Some results were qualified as non-detects ("U"). Other results, which were qualified as estimated ("J" and "UJ") due to quality control (QC) exceedances should be considered conditionally usable. The completeness percentage of all the analyses requested is 98.4[9]. Therefore, the completeness objective of 90 percent, as stated in the QAPP, has been met for the metals database.

[6] Value = (8 duplicate data / (135 – 8) discrete field sample data) X 100.
[7] This number represents 135 (non-field blank/equipment blank) total data points minus 8 duplicate sample data points.
[8] Value = ((127 discrete field data points – 0 unusable data points) / 127 discrete field data points) X 100.
[9] Value = (127 discrete data points /(127 discrete data points + 2 missing data points)) X 100.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation for groundwater samples collected at the Site for metals (nickel) collected by Malcolm Pirnie from April 18, 2005 through May 25, 2005.

The sample delivery group (SDG) number (laboratory package identification number), field identification, and corresponding laboratory identification of the samples that were submitted for data validation are presented in Table 1-1.

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
F5D220296	P-103-EB#1	F5D220296001	Ni Dissolved
	P-103-74 (also MS/MSD for Total)	F5D220296002	Ni Dissolved, Ni Total
	P-103-84.5	F5D220296003	Ni Dissolved
	P-103-94.5	F5D220296004	Ni Dissolved
	P-103-104.5	F5D220296005	Ni Dissolved
	P-103-114.5	F5D220296006	Ni Dissolved, Ni Total
	P-103-124.5	F5D220296007	Ni Dissolved
	P-103-134.5	F5D220296008	Ni Dissolved
	P-103-144.5	F5D220296009	Ni Dissolved, Ni Total
	P-103-154.5	F5D220296010	Ni Dissolved
	P-103-164.5	F5D220296011	Ni Dissolved
	P-103-174.5	F5D220296012	Ni Dissolved
	P-103-184.2	F5D220296013	Ni Dissolved
	P-103-194.2	F5D220296014	Ni Dissolved, Ni Total
	P-103-204.2	F5D220296015	Ni Dissolved
	P-103-214.2 (also MS/MSD)	F5D220296016	Ni Dissolved
	P-103-224.2	F5D220296017	Ni Dissolved
	P-103-234.2	F5D220296018	Ni Dissolved
F5D290261	P-103-244.2	F5D290261001, 002	Ni Dissolved, Ni Total
	P-103-253.3	F5D290261003	Ni Dissolved
	P-103-264.2	F5D290261004	Ni Dissolved
	P-103-274.2	F5D290261005, 006	Ni Dissolved, Ni Total
	P-103-284.25	F5D290261007	Ni Dissolved
	P-103-294.25	F5D290261008	Ni Dissolved
	P-103-303.25	F5D290261009, 010	Ni Dissolved, Ni Total
	P-103-333.4	F5D290261011, 012	Ni Dissolved, Ni Total

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
	P-103-344.2	F5D290261013, 014	Ni Dissolved
	P-103-354.2	F5D290261015	Ni Dissolved
	P-103-376.1	F5D290261016	Ni Dissolved
	P-103-384.2	F5D290261017	Ni Dissolved
	P-103-394.2	F5D290261018	Ni Dissolved
	P-103-404.2	F5D290261019	Ni Dissolved
F5E060294	P-108-74.15 (also MS/MSD)	F5E060294001	Ni Dissolved
	P-108-84.15	F5E060294002	Ni Dissolved
	P-108-DUP1 (P-108-84.15)	F5E060294003	Ni Dissolved
	P-108-94.15	F5E060294004	Ni Dissolved
	P-108-104.15	F5E060294005	Ni Dissolved
	P-108-114.15	F5E060294006	Ni Dissolved
	P-108-124.15	F5E060294007	Ni Dissolved
	P-108-134.15	F5E060294009, 008	Ni Dissolved, Ni Total
	P-108-144.15	F5E060294010	Ni Dissolved
	P-108-154.15	F5E060294011	Ni Dissolved
	P-108-164.15	F5E060294013, 012	Ni Dissolved, Ni Total
	P-108-174.15	F5E060294015, 014	Ni Dissolved, Ni Total
	P-108-184.15	F5E060294017, 016	Ni Dissolved, Ni Total
	P-108-192.80	F5E060294019, 018	Ni Dissolved, Ni Total
	P-108-DUP2 (P-108-192.80) (also MS/MSD for Dissolved)	F5E060294021, 020	Ni Dissolved, Ni Total
	P-108-EB1	F5E060294022	Ni Dissolved
	P-108-204.60	F5E060294024	Ni Dissolved
	P-108-214.60	F5E060294026, 025	Ni Dissolved, Ni Total
	P-108-224.60	F5E060294027	Ni Total
F5E130246	P-108-234.60	F3E130246001	Ni Dissolved
	P-108-244.60 (also MS/MSD for Total)	F3E130246002, 003	Ni Dissolved, Ni Total
	P-108-254.60	F3E130246004, 005	Ni Dissolved, Ni Total
	P-108-264.60	F3E130246006, 007	Ni Dissolved, Ni Total
	P-108-293.40	F3E130246008, 009	Ni Dissolved, Ni Total
	P-108-324.35	F3E130246010, 011	Ni Dissolved, Ni Total
	P-108-334.35	F3E130246012	Ni Dissolved
	P-108-347.65	F3E130246013	Ni Dissolved
	P-108-359.30	F3E130246014	Ni Dissolved

Table 1-1: *Sample Cross-Reference List*

Package Identification	***Sample ID***	***Laboratory ID***	***Analysis Performed***
	P-108-384.30	F3E130246015, 016	Ni Dissolved, Ni Total
	P-108-DUP3 (P-108-384.30)	F3E130246017, 018	Ni Dissolved, Ni Total
F5E200169	P-108-394.30 (also MS/MSD)	F5E200169001	Ni Dissolved
	P-107-EB1	F5E200169002	Ni Dissolved
	P-107-74.30	F5E200169003, 004	Ni Dissolved, Ni Total
	P-107-84.30	F5E200169005, 006	Ni Dissolved, Ni Total
	P-107-94.30	F5E200169007	Ni Dissolved
	P-107-104.30	F5E200169008	Ni Dissolved
	P-107-114.30	F5E200169009	Ni Dissolved
	P-107-DUP1 (P-107-114.30)	F5E200169010	Ni Dissolved
	P-107-124.30	F5E200169011, 012	Ni Dissolved, Ni Total
	P-107-134.30	F5E200169013, 014	Ni Dissolved, Ni Total
	P-107-144.30	F5E200169015	Ni Dissolved
	P-107-154.30	F5E200169016, 017	Ni Dissolved, Ni Total
	P-107-164.30	F5E200169018, 019	Ni Dissolved, Ni Total
	P-107-174.30 (also MS/MSD for Total)	F5E200169020, 021	Ni Dissolved, Ni Total
	P-107-184.30	F5E200169022, 023	Ni Dissolved, Ni Total
	P-107-194.30	F5E200169024	Ni Dissolved
	P-107-204.20	F5E200169025, 026	Ni Dissolved, Ni Total
	P-107-214.20	F5E200169027, 028	Ni Dissolved, Ni Total
	P-107-224.20	F5E200169029, 030	Ni Dissolved, Ni Total
	P-107-DUP2 (P-107-224.20 for Dissolved)	F5E200169031, 032	Ni Dissolved, Ni Total
	P-107-234.20	F5E200169033, 034	Ni Dissolved, Ni Total
	P-107-244.20	F5E200169035, 036	Ni Dissolved, Ni Total
	P-107-254.20	F5E200169038	Ni Dissolved
	P-107-264.20	F5E200169039, 040	Ni Dissolved, Ni Total
	P-107-274.20	F5E200169041	Ni Dissolved
	P-107-285.80 (also MS/MSD)	F5E200169042	Ni Dissolved
F5E270218	P-107-294.2 (also MS/MSD for Total)	F5E270218001, 005	Ni Dissolved, Ni Total
	P-107-316.4	F5E270218006	Ni Dissolved
	P-107-324.1	F5E270218007	Ni Dissolved
	P-107-334.1	F5E270218008	Ni Dissolved
	P-107-350.2	F5E270218002, 009	Ni Dissolved, Ni Total
	P-107-359.3	F5E270218010	Ni Dissolved
	P-107-371.6	F5E270218011	Ni Dissolved
	P-107-378.4	F5E270218003, 012	Ni Dissolved, Ni Total
	P-107-391.5	F5E270218004, 013	Ni Dissolved, Ni Total

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report summarizes the findings of the review and outlines any deviations from the applicable quality control (QC) criteria referenced in the following documents:

- New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.
- United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* EPA 540-R-01-008, July 2002.
- United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.
- United States Environmental Protection Agency, Region 2. *Validation of Metals for the Contract Laboratory Program based on SOW ILM05.3.* SOP No. HW-2, Revision 13. September 2006.
- URS Corporation, GTE Operations Support Incorporated (GTEOSI). *Groundwater Investigation Work Plan (QAPP: Appendix C), Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* URS, September 2002.

1.3. Analytical Methods

The environmental samples presented in this report were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri, for selected metals, including nickel, analyses. The laboratory used the following USEPA guidance methods for the analyses:

- SW-846 Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by FLAA or ICP Spectroscopy
- SW-846 Method 6010B: Inductively Coupled Plasma-Atomic Emission Spectrometry

The laboratory assigned an SDG number to a group of samples during their sample log-in process. The SDG number is the means by which the laboratory tracks samples and QC analyses. A total of 97 samples in a total of six SDGs are included in this data validation report. Of the 97 total number of samples, 42 were analyzed for total nickel and 96 for dissolved nickel[10]. The SDG, field identification, and corresponding laboratory identification for each sample are summarized in Table 1-1.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. Section 3 presents a summary of the findings associated with the validation and a discussion of the specific QA/QC deviations and qualifications performed on the sample data. Section 4 presents a discussion of data completeness and usability. Section 5 presents the Data Usability Summary Report (DUSR) summary information.

[10] Each sample may included total recoverable and/or dissolved fractions.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (GTEOSI, 2002), the analytical methodologies, the data validation guidelines referenced in Section 1, and professional judgment[11]. Malcolm Pirnie performed a data review of all analytical results to assess data quality. The data review included an assessment of sample handling protocols and supporting laboratory and field QC parameters. The following is a list of specific analytical information evaluated during the validation:

- Data package completeness review – per the NYSDEC ASP Category B or USEPA CLP deliverables requirements
- Analytical methods performed and test method references
- Sample condition - review of log-in records for cooler temperature, chemical preservation, etc.
- Holding times - comparison of collection, preparation, and analysis dates
- Analytical results - units, values, significant figures
- Sample traceability to raw data
- Initial calibration – comparison to technical guideline criteria
- Continuing calibration – comparison to technical guideline criteria
- Initial and continuing calibration blanks
- Method blank results and laboratory contamination
- Laboratory control sample (LCS) results and comparison to laboratory control limits
- Matrix spike/matrix spike duplicate (MS/MSD) results and comparison to laboratory control limits
- Field replicate/duplicate results and comparison to technical guideline criteria
- Field QC sample (i.e., equipment blanks and field blanks)
- Reporting limits and Dilutions
- Electronic Data Deliverables (EDDs) – comparison to the hardcopy analytical report

The analytical reports were reviewed for completeness and the accompanying QC data were reviewed for acceptable performance. When QC results indicated poor performance, Malcolm Pirnie applied data qualifiers to the results to inform the data user of the possible performance problem. These qualifiers are

[11] See footnote 5.

in addition to or a revision of the qualifiers provided by the laboratory. A summary of the data qualifiers used for this review is presented in Section 2.2.

2.2. Data Qualifiers

The following qualifiers have been used by the laboratory for metals analyses:

"U" Non-detect result at the method (or instrument) detection limit.

"B" Indicates an estimated value or a value below the established reporting limit but above the method detection limit.

Laboratory qualifiers defined above, are retained in the final database unless revised during the data validation process to one of the following qualifiers:

"U" The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

"J" The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

"UJ" The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

"R" The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets Site-specific criteria for data quality and use. It was developed to review and evaluate the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

2. *Have all holding times been met?*

3. *Do all the QC data: blanks, calibration standards, calibration verifications, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?*

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

6. *Have the correct data qualifiers been used?*

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes whether QA/QC parameters reported, which were specified in Section 2.1, met validation criteria. Summary of the individual components of the review are described in the following sub-sections.

3.2. Review of Validation Criteria

3.2.1. Completeness Review

The laboratory provided the analytical report using formats based on the Contract Laboratory Program (CLP). With the exception of noted items detailed in Section 3.2.5, all necessary documents were included in the report packages including a case narrative summarizing the QC issues associated with the project analyses.

3.2.2. Test Methods

The laboratory performed the analyses using the analytical test methods listed in Section 1.3. They included USEPA SW-846 Method 3010 (digestion of aqueous samples) followed by Method 6010B (ICP) for metals analysis. No method anomalies were noted.

3.2.3. Sample Receipt

The laboratory received 97 aqueous samples[12] for metals analysis between April 22, 2005 and May 27, 2005. Samples collected for different analytical fractions from the same boring at the same depth are defined as the same sample within this data validation report. The sample temperatures at the time of receipt by the laboratory were within the recommended temperature range of 4°C ± 2°C for all SDGs. Field and laboratory personnel completed the chain-of-custody (COC) documents recording the signature, date, and time of custody transfer. The laboratory recorded the condition of the samples at the time of receipt on a "Condition Upon Receipt Form." This form identifies whether the containers were received undamaged, within the proper temperature range, at the proper pH, in a container that is sealed with a custody seal on the exterior, and with a completed COC enclosed to identify all samples submitted to the laboratory.

The following problems with sample receipt were found:

- SDG F5D220296: the sample bottle labeled P-103-184.15 was labeled P-103-184.2 on the COC. The COC ID will be used in this validation.

There were no custody seals attached to individual sample containers. No qualification is necessary because the exterior of the shipment coolers had intact custody seals.

3.2.4. Holding Times

The laboratory performed all nickel analyses within the EPA-recommended holding time of 180 days from date of collection for acid preserved samples.

[12] Each sample may include total recoverable and/or dissolved fractions.

3.2.5. Analytical Results

For each sample tested, the laboratory provided the analytical test information using the laboratory's standardized format, which shows critical information pertaining to the analyses performed. The information provided includes the following: the laboratory name; the project name; the analysis type; the laboratory sample ID; matrix; date sampled; date received; preparation batch ID; the result; the reporting limit; the units of measure; the laboratory method; dilution factor; analysis time; preparation date; analysis date; work order number, and laboratory qualifiers (if any). The laboratory provided all the appropriate forms for the requested methods with the following exceptions.

- SDG F5E060294: for sample P-108-224.60, the COC had requested for dissolved nickel; however, the laboratory had analyzed for total nickel.
- SDG F5E200169: for sample P-107-144.30, the COC had requested for both dissolved and total nickel; however, only the dissolved fraction was reported by the laboratory.

A review of dissolved vs. total concentrations is performed and detailed in Section 3.2.15, subsequent to modifications, if any, to the results performed in the following sections prior to that section.

3.2.6. Traceability to Raw Data

Traceability of the metals analyses is established by the digestion (preparation) logs. These forms list the project samples analyzed per laboratory batch processed and the corresponding QC samples (e.g., preparation blank and laboratory control sample) performed with the project samples. All project samples analyzed, for all SDGs, were included on the applicable forms.

3.2.7. Initial Calibration

The laboratory prepared an initial calibration (ICAL) curve for each analyte in accordance with method criteria. Initial calibration verification (ICV) standards were analyzed immediately after each ICAL, with recoveries all within ± 10% of the true values for all analytes. All ICVs are acceptable.

3.2.8. Continuing Calibration Verification

The continuing calibration verification (CCV) standards were analyzed after the ICALs and after every 10 project samples as required by the reference test method. The percent recoveries were all within ± 10% of the true values for all analytes. All CCVs are acceptable.

3.2.9. Initial and Continuing Calibration Blanks

The initial calibration blank (ICB) and continuing calibration blanks (CCB) were analyzed after the ICALs and after every 10 project samples as required by the reference test method. In general, initial and continuing calibration blank results should all have been less than the laboratory reporting limit (a.k.a., practical quantitation limit (PQL)), but in a few cases the blank results were greater than the laboratory MDL (or -MDL). For these cases, if an analyte in the associated field samples was detected at a concentration greater than the MDL but less than the PQL, the validation process qualified the result to account for the potential contamination associated with the analysis system. A summary of the samples and analytes that were revised due to laboratory contamination are presented in Table 3-1.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F5D220296			None
F5D290261			None

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F5E060294	P-108-74.15 Dissolved P-108-94.15 Dissolved P-108-104.15 Dissolved P-108-114.15 Dissolved P-108-134.15 Total P-108-134.15 Dissolved P-108-144.15 Dissolved P-108-154.15 Dissolved P-108-164.15 Total P-108-164.15 Dissolved P-108-174.15 Total P-108-174.15 Dissolved P-108-184.15 Total P-108-184.15 Dissolved P-108-192.80 Total P-108-192.80 Dissolved P-108-DUP2 Total P-108-DUP2 Dissolved P-108-204.60 Dissolved P-108-214.60 Total P-108-214.60 Dissolved P-108-224.60 Total	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.
F5E130246	P-108-234.60 Dissolved P-108-244.60 Dissolved P-108-244.60 Total P-108-254.60 Dissolved P-108-254.60 Total P-108-264.60 Total P-108-293.40 Dissolved P-108-293.40 Total P-108-324.35 Dissolved P-108-324.35 Total P-108-334.35 Dissolved P-108-347.65 Dissolved P-108-359.30 Dissolved	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.

Table 3-1. *Evaluation of Laboratory Initial and Continuing Calibration Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F5E200169	P-107-74.30 Dissolved P-107-74.30 Total P-107-84.30 Dissolved P-107-84.30 Total P-107-94.30 Dissolved P-107-114.30 Dissolved P-107-124.30 Dissolved P-107-124.30 Total P-107-134.30 Total P-107-154.30 Total P-107-164.30 Dissolved P-107-164.30 Total P-107-174.30 Dissolved P-107-174.30 Total P-107-184.30 Dissolved P-107-184.30 Total P-107-214.20 Dissolved P-107-214.20 Total P-107-224.20 Dissolved P-107-224.20 Total P-107-DUP2 Dissolved P-107-DUP2 Total P-107-234.20 Dissolved P-107-234.20 Total P-107-244.20 Dissolved P-107-244.20 Total P-107-254.20 Dissolved P-107-264.20 Dissolved P-107-264.20 Total P-107-274.20 Dissolved P-107-285.80 Dissolved	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F5E270218	P-107-294.2 Dissolved P-107-294.2 Total P-107-378.4 Total	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL.

3.2.10. Laboratory Method Blanks (Preparation Blanks)

There were nickel contaminations detected in several preparation blanks. When contamination is detected, the corresponding project sample results for the identified contaminants are revised to non-detect if the associated sample results were less than five times the method blank results in accordance with the QAPP (GTEOSI, 2002). A summary of the samples and analytes that were revised due to laboratory contamination are presented in Table 3-2.

Table 3-2. *Evaluation of Laboratory Method Blanks*

Package Identification	***Sample ID***	***Analyte***	***Action***
F5D220296			None
F5D290261			None
F5E060294			None
F5E130246	P-108-234.60 Dissolved * P-108-244.60 Dissolved * P-108-244.60 Total * P-108-254.60 Dissolved * P-108-254.60 Total * P-108-264.60 Total * P-108-293.40 Dissolved * P-108-293.40 Total * P-108-324.35 Dissolved * P-108-324.35 Total * P-108-334.35 Dissolved * P-108-347.65 Dissolved * P-108-359.30 Dissolved *	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL
F5E200169	P-107-74.30 Dissolved * P-107-74.30 Total * P-107-84.30 Dissolved * P-107-84.30 Total * P-107-94.30 Dissolved * P-107-114.30 Dissolved * P-107-124.30 Dissolved * P-107-124.30 Total * P-107-134.30 Total * P-107-154.30 Total * P-107-164.30 Dissolved * P-107-164.30 Total * P-107-174.30 Dissolved * P-107-285.80 Dissolved *	Nickel	Revise to "U" non-detect at PQL, for all detects < PQL (blanks were < (-MDL)).
F5E270218			None

* - Also qualified due to other types of blank contamination

3.2.11. Laboratory Control Sample Results

The laboratory analyzed an LCS for each QC batch. The percent recoveries were within laboratory control limits for all QC batches.

3.2.12. Matrix Spike Analyses

Samples for Matrix Spike / Matrix Spike Duplicate (MS/MSD) analysis were chosen by the laboratory. The MS/MSD sample analysis is designed to provide information about the effect of sample matrix on the sample preparation procedures and the measurement methodology. Data precision is also measured. All percent recoveries (%R) and relative percent differences (RPD) were within criteria ($75 \leq \%R \leq 125$; RPD $\leq 20\%$) - no qualifications were required.

Table 1-1 specifies the samples that were also performed for MS/MSD.

For the following, matrix effect of the samples for accuracy and precision was not evaluated:

- For SDGs F5D290261, an MS/MSD was only performed on samples from other clients of the laboratory.

Of the 127 discrete nickel data values (non-QA/QC values), nine of them had corresponding MS/MSD results. This represented a frequency of 7.1 percent, which exceeds the QAPP's minimum required goal of 5 percent.

3.2.13. Field Duplicate Analyses

Five project samples were submitted as blind field duplicates. This represents eight duplicate data points (five for dissolved nickel and three for total nickel). By design, the laboratory was never made aware of which field samples the blind field duplicates were associated with. An evaluation of the precision of the field sampling procedure (as well as the laboratory analysis procedure) was made based on RPD calculated between the original and duplicate sample results. Blind field duplicate samples were collected and analyzed to assess the overall sampling and analytical precision. Evaluation calculations were made only when both results were above the PQL. The RPD values for most duplicates were within the criterion of $\leq 30\%$ with the following exceptions:

- There were no field duplicates performed for SDGs F5D220296, F5D290261, and F5E270218.

It should be noted that QAPP requirements (GTEOSI, 2002) specified that a field duplicate sample be collected at a rate of one sample for every ten samples (collection rate of 10%). Thirteen (13) field duplicates data points were required to be collected for the project since a total of 127[13] project sample fractions were submitted (not including other field QC samples collected) for analysis. The actual collection rate performed is equivalent to 6.3 percent[14]. Since an adequate number of field duplicate samples were not collected, the precision objective for the project is not in compliance. Table 3-3 shows the evaluation of field duplicate samples submitted.

Table 3-3. *Evaluation of Field Duplicate Samples*

Package Identification	***Sample ID***	***Analytes***	***Action***
F5E060294	P-108-84.15 Dissolved	Nickel	None
	P-108-192.80 Dissolved	Nickel	None
	P-108-192.80 Total	Nickel	None
F5E130246	P-27-99.75 Dissolved	Nickel	None
	P-27-99.75 Total	Nickel	None
F5E200169	P-107-114.30 Dissolved	Nickel	None
	P-107-224.20 Dissolved	Nickel	None

[13] This number represents 135 (non-field blank/equipment blank) total data points minus 8 duplicate sample data points.
[14] Value = (8 duplicate data / 127 discrete sample data points) X 100.

3.2.14. Field Blanks and Equipment Blanks

A total of 0 field blanks and 3 equipment blank data points were performed as part of the samples submitted for this data validation report. Although this limited number of blanks is in compliance with the QAPP, it is slightly insufficient to fully evaluate field contaminations (false positives). An appropriate frequency of blank collections should have been at a 5 percent rate. Based on the 5 percent rate, 7[15] field blanks and/or equipment blank data points should been performed. The actual rate performed is 2.4 percent[16]. However, field blank collection for each time the sampling equipment was cleaned is also acceptable. This appears to have been the procedure.

There were no field blanks or equipment blanks submitted with SDGs F5D290261, F5E130246, and F5E270218. However, at least one equipment blank was submitted for each groundwater profiler location. Equipment blanks were evaluated against the groundwater profiler location samples. The following list summarized whether and which equipment blank had contamination:

Equipment Blank	Contamination?	Concentration (ug/L)
P-103-EB1	No	4 ug/L U
P-108-EB1	Yes	4.3 ug/L J
P-107-EB1	No	4 ug/L U

If an analyte was detected in the field blank or equipment blank, the associated field sample results are revised to non-detect if they were less than 10 times the blank result (when blank result > PQL), or to non-detect at the PQL value (when blank result < PQL). A summary of the samples and analytes that were revised due to field sampling contamination are presented in Table 3-4.

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	*Sample ID*	*Analyte*	*Action*
F5D220296			None
F5D290261			None

[15] Value = (135 (non-field blank/equipment blank) total data points minus 8 duplicate sample data points) X 0.05.
[16] Value = 3 / (135 (non-field blank/equipment blank) total data points minus 8 duplicate sample data points) X 100.

Table 3-4. *Evaluation of Field Blank and Equipment Blank Results*

Package Identification	*Sample ID*	*Analyte*	*Action*
F5E060294	P-108-74.15 Dissolved * P-108-94.15 Dissolved * P-108-104.15 Dissolved * P-108-114.15 Dissolved * P-108-134.15 Total * P-108-134.15 Dissolved * P-108-144.15 Dissolved * P-108-154.15 Dissolved * P-108-164.15 Total * P-108-164.15 Dissolved * P-108-174.15 Total * P-108-174.15 Dissolved * P-108-184.15 Total * P-108-184.15 Dissolved * P-108-192.80 Total * P-108-192.80 Dissolved * P-108-DUP2 Total * P-108-DUP2 Dissolved * P-108-204.60 Dissolved * P-108-214.60 Total * P-108-214.60 Dissolved * P-108-224.60 Total *	Nickel	Revised to "U" (non-detect)
F5E130246	P-108-234.60 Dissolved * P-108-244.60 Dissolved * P-108-244.60 Total * P-108-254.60 Dissolved * P-108-254.60 Total * P-108-264.60 Total * P-108-293.40 Dissolved * P-108-293.40 Total * P-108-324.35 Dissolved * P-108-324.35 Total * P-108-334.35 Dissolved * P-108-347.65 Dissolved * P-108-359.30 Dissolved *	Nickel	Revised to "U" (non-detect)
F5E200169			None
F5E270218			None

* - Also qualified due to other types of blank contamination

3.2.15. Quantitation of Results

The reporting limits for nickel was in accordance with the NYSDEC requirements (i.e., reporting at the PQL specified in the QAPP). The laboratory reported estimated data below the PQL but above the MDL, and qualified the estimated data with a "B" qualifier. The validation process revised the "B" qualifier to a "J" qualifier to provide consistency for others in review of the validated database.

When dissolved and total nickel are performed on the same sample, the dissolved concentration should not be greater than the total concentration if the dissolved concentration is greater than or equal to 5x its MDL. If it is, and if the dissolved concentration is greater than the total concentration by more than 20%, both dissolved and total concentrations are to be qualified as estimated, "J." If the difference is greater than 50%, both concentrations are to be qualified as unusable, "R." Therefore, the dissolved and total nickel concentrations for the following samples are qualified as estimated: P103-303.25, P107-134.30, P107-135.30, and P107-204.20. There were no differences greater than 50%.

3.2.16. Electronic Data Deliverables

The results in electronic database matched results listed on the hardcopy analytical report including laboratory qualifiers. The qualifiers and results were revised based on quality control issues, and foundation for changes are detailed in previous sections of this DUSR. The qualifiers were also placed onto the hardcopy reporting forms located near the beginning of each deliverable package (i.e., SDG package).

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent[17] of the nickel data were determined to be usable. However, those sample results qualified as estimated, "J" and "UJ," due to data validation QC exceedances should be considered conditionally usable for qualitative and quantitative purposes. There were two samples which were not analyzed as specified in the COC and are discussed in Section 3.2.5. The completeness percentage, with the two missing data points taken into consideration is 98.4%[18].

The samples collected from the site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, in the data validation guidelines listed in Section 1.2, in the QAPP (GTEOSI, 2002) established for this project, and by professional judgment. There were no major deficiencies, which would have resulted in unusable data for either quantitative or qualitative purposes. However, there were some minor deficiencies in the data generation process, which resulted in some sample data being characterized as estimated and/or non-detects. Identification of a data point as estimated indicates uncertainty in the reported concentration of the analyte, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PSARCC) parameters. Completeness has been discussed above.

Precision is measured through the evaluation of field duplicate samples and matrix spike duplicate samples. For the metals analyses, none of the data were rejected due to precision non-conformances. However, the frequency of duplicate sample collection was insufficient, and therefore, evaluation of this criteria may not be adequate.

LCS, MS, and MSD recoveries indicate the accuracy of the data. For the nickel analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte quantification are indicators of the representativeness of the analytical data. There were some nickel contamination detected in the blanks resulting in many detects being qualified as non-detects.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of analytes that can be determined with a designated level of confidence. None of the metals data were rejected due to sensitivity non-conformances.

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[17] Value = ((127 discrete field data points – 0 unusable data points) / 127 discrete field data points) X 100.
[18] Value = (127 discrete data points /(127 discrete data points + 2 missing data points)) X 100.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets Site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. *Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?*

   The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met with the exception of two missing analyses as discussed in Section 3.2.5. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. *Have all holding times been met?*

   The holding times were met for all analyses.

3. *Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?*

   The laboratory used laboratory control limits. QA/QC deviations and qualifications performed on the sample data are discussed in Chapter 3. Major non-conformances were not detected for the data. However, the low frequency of replicate (duplicate) analyses was not in compliance with the QAPP.

4. *Have all of the data been generated using established and agreed upon analytical protocols?*

   The QAPP required that USEPA guidance methods be used in the analysis of the samples. The laboratory used the required method protocols for the analyses performed for this sampling event, which met data user and client needs.

5. *Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?*

   The evaluation of selected raw data confirmed the information provided in the data packages.

6. *Have the correct data qualifiers been used?*

   The laboratory applied the correct qualifiers to the sample data. The laboratory qualifiers were revised and/or new qualifiers applied as required by the validation guidelines listed in Section 1. The validation guideline qualifier definitions are listed in Section 2.2.

References

New York State Department of Environmental Conservation. *Analytical Services Protocol.* Guidance documents including Exhibits A, B, C, D, E, F, G, and I. June 2000.

United States Environmental Protection Agency. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* EPA 540-R-01-008, July 2002.

United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* SW-846: Final Update IIIA. April 1998.

United States Environmental Protection Agency, Region 2. *Validation of Metals for the Contract Laboratory Program based on SOW ILM05.3.* SOP No. HW-2, Revision 13. September 2006.

URS Corporation, GTE Operations Support Incorporated (GTEOSI). *Groundwater Investigation Work Plan (QAPP: Appendix C), Former Sylvania Electric Products Incorporated Facility, Hicksville, New York.* URS, September 2002.

Data Usability Summary Report
Radionuclides
Profiles P-103, P-107, and 108

Former Sylvania Electric Products Facility
GTE Operations Support Incorporated
Hicksville, NY

REPORT

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Executive Summary

This report addresses data quality for groundwater samples collected at the former Sylvania Electric Products facility in Hicksville, New York (the Site). Sample collection activities were conducted by Malcolm Pirnie, Inc. (Malcolm Pirnie) from April 18 through May 17, 2005.

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for radiochemistry analyses including alpha spectrometry for isotopic thorium and isotopic uranium using United States Department of Energy (USDOE) Methods and laboratory standard operating procedures (SOP's) and gas proportional counting for gross alpha, radium-226 and radium-228 using USEPA SW-846 Methods and laboratory SOP's. The analytical data generated for this investigation were evaluated by Malcolm Pirnie using the quality assurance/quality control (QA/QC) criteria established in the methods as guidance. Non-conformances from the QA/QC criteria were qualified based on guidance provided in the Science Applications International Corporation (SAIC) *Laboratory Data Validation Guidelines For Evaluating Radionuclide Analyses*, 143-ARCS-00.08, Revision 06, June 2000 and USDOE *Guidance For Radiochemical Data Validation*, Draft RD4, October 4, 1995.

Method non-conformances requiring data validation qualification (J) include laboratory duplicate analysis, field duplicate analysis and equipment blank contamination. None of these non-conformances were significant enough to jeopardize the usability of the data.

Overall, 90 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J) due to data validation QA/QC exceedances should be considered conditionally usable. Therefore, the completeness objective of 90 percent, as stated in the quality assurance project plan (QAPP), was met.

1. Introduction

1.1. Sample Identification

This report addresses the results of a data quality evaluation of groundwater samples with radionuclides collected at the Site by Malcolm Pirnie from April 18 through May 17, 2005.

The quantity and types of samples that were submitted for data validation are presented in Table 1-1.

Table 1-1. *Sample Cross-Reference List*

Package Identification	*Date Collected*	*Client ID*	*Laboratory ID*	*Analysis Requested*
F5D220296:	4/18/05	P-103-EB#1	F5D220296-001	Alpha, GFPC
	4/19/05	P-103-74	F5D220296-002	Alpha, GFPC
	4/19/05	P-103-84.5	F5D220296-003	Alpha, GFPC
F5E060294:	5/2/05	P108-74.15	F5E060294-001	Alpha, GFPC
	5/2/05	P108-84.15	F5E060294-002	Alpha, GFPC
	5/3/05	P108-DUP1	F5E060294-003	Alpha, GFPC
F5E200169:	5/16/05	P107-74.30	F5E200169-003	Alpha, GFPC
	5/16/05	P107-84.30	F5E200169-005	Alpha, GFPC
F5F240341	5/17/05	P107-94.30	F5F240341-001	Alpha
	5/17/05	P107-104.3	F5F240341-002	Alpha

Notes:
Alpha indicates Alpha Spectrometry of thorium (isotopic) and uranium (isotopic).
GFPC indicates Gas Proportional Counting for gross alpha, radium 226 and radium 228.

1.2. General Considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing methodologies, it applies to all aspects of the analytical system and especially to samples, their measurements, and the actual data output. Accordingly, for the samples and analyses addressed herein, this report outlines deviations from the applicable QC criteria outlined in the following documents:

- URS Corporation *GTE Operations Support Incorporated. (GTEOSI). Groundwater Investigation Work Plan, Former Sylvania Electric Products Facility, Hicksville, New York,* QAPP: Appendix C. September 2002.

- United States Department of Energy (USDOE). 1997. *Environmental Measurements Laboratory (EML) Procedures Manual, 28th Edition, Volume 1.* (HASL-300) New York, New York.

Deviations from the QA/QC criteria were qualified based on guidance provided in the following documents:

- Science Applications International Corporation (SAIC). 2000. *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyzes*, 143-ARCS-00.08, Revision 06. Oak Ridge, Tennessee.

- USDOE. October 4, 1995. *Guidance for Radiochemical Data Validation*, Draft RD4. Gaithersburg, Maryland.

1.3. Analytical Methods

The environmental samples collected for this investigation were submitted to Severn Trent Laboratories, Inc. of Earth City, Missouri for radiochemistry analyses including alpha spectrometry (thorium-228, thorium-230, thorium-232, uranium-234, uranium-235, and uranium-238) using USDOE Methods and laboratory SOP's and gas proportional counting (gross alpha, radium 226 and radium 228) using USEPA SW-846 methods and laboratory SOP's. The methods used in this investigation are presented in Table 1-2.

Table 1-2. *Analytical Method References*

Parameter	***Method***	***Reference***
Alpha Spectrometry (Uranium-234, -235 and -238)	NAS/DOE 3050 RP (DOE RP-725)*	1, 2
Alpha Spectrometry (Thorium-228, -230 and -232)	NAS/DOE 3004/RP (DOE RP-725)*	1, 2
Radium-226 by GFPC	SW-846 9315 MOD	3
Radium-228 by GFPC	SW-846 9320 MOD	3

Notes:
* The Extraction Chromatography method used for analysis utilizes the same technology as the cited reference but includes proprietary techniques more selective in separation of uranium and thorium from the matrix. The reference is for background information only.
1. United States Department of Energy (USDOE). October 1994. DOE Method for Evaluating Environmental and Waste Management Samples.
2. National Academy of Science (NAS).
3. USEPA SW-846. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, November 1986 and its updates.

The following sections of this document address distinct aspects of the validation process. Section 2 lists the data QA/QC protocols used to validate the sample data. Specific QA/QC deviations and qualifications performed on the sample data are discussed in Section 3. Data completeness and usability are discussed in Section 4. Section 5 presents the Data Usability Summary Report (DUSR) Summary Information. A copy of the validated electronic deliverable data is summarized in Attachment A.

2. Data Validation Protocols

2.1. Sample Analysis Parameters

The validation of analyses for this project used guidance presented in the QAPP (URS, 2002), the analytical methodology, and the data validation guidelines referenced in Section 1 herein.

The following QA/QC parameters were evaluated for the radiochemistry (alpha spectrometry and gas-flow proportional counting) analyses (where applicable):

- Holding times and sample preservation;
- Calibration;
- Blank analysis:
- Tracer recovery;
- Laboratory Control Sample (LCS);
- Matrix Spike Sample (MS)
- Duplicate analysis;
- Field duplicate analysis;
- Radionuclide quantitation and detection limit evaluation;
- Chemical separation specificity (alpha spectrometry);
- System performance; and
- Documentation completeness.

It should be noted that no Matrix Spike samples were associated with these data. The field blind duplicate associated with these data is P108-84.15 associated with P108-DUP1.

2.2. Data Validation Qualifiers

The following guidelines are used regarding the assignment of qualifiers and the use of qualified data:

- QA/QC exceedances which do not result in the qualification of an analyte, or which result in additional qualification of the analyte with the same qualifier, are not discussed.

- The use of estimated analytical data for quantitative uses is consistent with the guidance presented in the *USEPA Risk Assessment Guidance for Superfund* (USEPA 1992).

The following qualifiers may have been used in this data validation.

"J" The associated numerical value is an estimated quantity, due to a QC or statistical exceedance.

"UJ" The associated non-detect value is an estimated quantity, due to a QC or statistical exceedance.

"R" The associated non-detect or numerical value is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

2.3. Data Usability Summary Report Questions

The DUSR determines whether or not the data meets site-specific criteria for data quality and use. It was developed by reviewing and evaluating the analytical data packages. During the course of this review the following questions were addressed (where applicable):

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

2. Have all holding times been met?

3. Do all the QC data (where applicable): blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?

4. Have all of the data been generated using established and agreed upon analytical protocols?

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

6. Have the correct data qualifiers been used?

The answers to the questions presented by the DUSR are presented in the following sections of the report and in the DUSR Summary Information Section, Section 5.

3. Data Quality Evaluation

3.1. Summary

This section summarizes which QA/QC parameters specified in Section 2.1 met validation criteria, and which QA/QC parameters did not meet validation criteria. Samples requiring qualification are described in the following sections, and are identified by the description documented on the sample chain-of-custody records.

3.2. Alpha Spectrometry Analyses

3.2.1. Criteria

The QA/QC parameters presented in Section 2.1 for radiochemistry were applied to the environmental samples listed in Table 1-1. The following QA/QC parameters were found to meet validation criteria:

- Holding times and sample preservation;
- Calibration;
- Tracer recovery;
- Laboratory Control Sample (LCS);
- Radionuclide quantitation and detection limit evaluation;
- Chemical separation specificity (alpha spectrometry);
- System performance; and
- Documentation completeness.

Only those QA/QC parameters not meeting validation criteria are discussed in subsequent sections.

3.2.2. Blank Analysis

The field and laboratory blank results were evaluated using the following statistical approach: if the net blank result was not less than the associated uncertainty and if the sample result ± uncertainty was less than ten times the associated blank result ± uncertainty, the qualifier "J" was applied to the associated sample result. The statistical evaluation of the field and laboratory blank results is summarized in Table 3-1.

Table 3-1. *Blank Evaluation for Thorium/Uranium Analyses.*

Blank ID	*Radionuclide*	*Blank Concentration ± Uncertainty (pCi/L)*	*Affected Samples*	*Action*
P-103-EB#1	Th-230	0.15 ±0.12	P-103-74 P-103-84.5 P-107-84.3	J

Note:
pCi/L indicates picocuries per liter
Uncertainty indicates total propagated uncertainty, which includes counting error and non-counting error.

3.2.3. Duplicate Analysis

If the Duplicate Error Ratio (DER) is greater than one (1) when comparing laboratory or field duplicate samples then the qualifier of "J" was applied to the associated sample results, as summarized in table 3-2 .

Table 3-2. *Evaluation of Duplicate Analysis*

Sample ID	*Affected Radionuclide Results*	*Action*
F5E060294:		
P-108-84.15 P-108-DUP-1	Uranium-234	J
F5E200169:		
P107-74.30 P107-84.30	Uranium-234	J
F5F240341:		
P107-94.30 P107-104.3	Uranium-234	J

3.2.6. Radionuclide Quantitation and Detection Limits

If the net positive results are less than their uncertainties and the uncertainty multiplied by 1.65 is greater than the MDC, this would indicate that the sample counts were less than the critical values or less than 95% confidence of positive detection, therefore the sample results were qualified as estimated "J", as summarized in Table 3-3. It the net negative result has an uncertainty smaller than their absolute value, this is an indication of improper blank subtraction and the sample results were rejected "R".

Table 3-3. *Evaluation of Positive Results versus Uncertainties for Alpha Spectrometry Analyses*

Sample ID	*Affected Radionuclide Results*	*Sample Concentration ± Uncertainty (pCi/L)*	*Action*
F5F240341:			
P-107-104.3	Uranium-235	0.36 ± 0.48	J

3.3. Gas Proportional Counting

3.3.1. Criteria

The QA/QC parameters presented in Section 2.1 were applied to the environmental samples listed in Table 1-1. All of the following QA/QC parameters were found to meet validation criteria:

- Holding times and sample preservation;
- Calibration;
- Blank analysis:
- Laboratory Control Sample (LCS);

- Duplicate analysis;
- Field duplicate analysis;
- Radionuclide quantitation and detection limit evaluation;
- System performance; and
- Documentation completeness.

4. Summary and Data Usability

This chapter summarizes the analytical data in terms of its completeness and usability. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. Overall, 100 percent of the radiochemistry data were determined to be usable for qualitative and quantitative purposes. Those sample results qualified as estimated (J) due to data validation QA/QC exceedances should be considered conditionally usable.

The samples collected from the Site in Hicksville, New York were evaluated based on QA/QC criteria established by methods as listed in Section 1.3, by the data validation guidelines listed in Section 1.2, and by the QAPP (URS, 2002) established for this project. Major deficiencies in the data generation process would have resulted in data being rejected, indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor deficiencies in the data generation process resulted in some sample data being characterized as approximate or estimated. Identification of a data point as approximate indicates uncertainty in the reported concentration of the radionuclide, but not its assigned identity.

The following paragraphs present the adherence of the data to the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PSARCC) parameters.

Precision is measured through the evaluation of field duplicate samples and laboratory duplicate samples. For the radiochemistry analyses, none of the data were rejected due to precision non-conformances.

LCS recoveries indicate the accuracy of the data. For the radiochemistry analyses, none of the data were rejected due to accuracy non-conformances.

Holding times, sample preservation, blank analysis, and analyte identification and quantification are indicators of the representativeness of the analytical data. For the radiochemistry analyses, none of the data were rejected due to accuracy non-conformances.

Comparability is not compromised, provided that the analytical methods do not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. These standards are compared to other unknowns to verify their concentrations. Since standard analytical methods and reporting procedures were consistently used by the laboratory, the comparability criteria for the analytical data were met.

Sensitivity is established by reported detection limits that represent measurable concentrations of radionuclidesthat can be determined with a designated level of confidence. Sensitivity requirements were met for the sample data in this project. None of the radiochemistry data were rejected due to the sensitivity non-conformances.

5. Data Usability Summary Report Summary Information

The DUSR was performed to determine whether or not the data meets site-specific criteria for data quality and use. The DUSR is developed by reviewing and evaluating the analytical data package. The following questions were addressed:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?

The QAPP required that USEPA Level III deliverables be provided by the laboratory for each data package. This requirement was met as it applies to the methods used by the laboratory for sample analysis. The evaluation of the sample data was completed using the information provided in the data packages provided by the laboratory.

2. Have all holding times been met?

The holding times were met for the radiochemistry analyses.

3. Do all the QC data: blanks, standards, spike recoveries, replicate analyses, and sample data fall within the protocol-required limits and specifications?

The laboratory used the laboratory control limits during the analyses performed for this sampling event. QA/QC deviations and qualifications performed on the sample data are discussed in Chapter 3. Major non-conformances were not detected for the radiochemistry data.

4. Have all of the data been generated using established and agreed upon analytical protocols?

The QAPP required that USDOE methods are used in the analysis of samples collected for this sampling event. The laboratory used the required method protocols (with some minor modifications) for the analyses performed for this sampling event, which met data user and client needs.

5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?

The evaluation of selected raw data confirmed information provided in the data packages.

6. Have the correct data qualifiers been used?

The laboratory applied the correct qualifiers to the sample data. The validation qualifiers were applied as required by validation guidelines as listed in Section 1

References

O'Brien & Gere Engineers, Inc. 2000. *Supplement to the Approved Work Plan (QAPP – Appendix C), Former Sylvania Electric Products Incorporated Facility Cantiague Rock Road, Hicksville, New York.* Syracuse, New York.

Science Applications International Corporation (SAIC). 1992. *Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyzes*, 143-ARCS-00.08, Revision 06. Oak Ridge, Tennessee.

United States Department of Energy (USDOE).1997. *Environmental Measurements Laboratory (EML) Procedures Manual (HASL-300),* 28th Edition, Volume 1. New York, New York.

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United States Environmental Protection Agency (USEPA). 1992. *USEPA Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A),* 540/1-891002. Washington D.C.

URS Corporation *GTE Operations Support Incorporated. (GTEOSI). Groundwater Investigation Work Plan, Former Sylvania Electric Products Facility, Hicksville, New York,* QAPP: Appendix C. September 2002.

Former Sylvania Electric Products Facility, Hicksville, NY

Voluntary Cleanup Program Site No. V00089-1

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Data Report P103, P107 and P108

February 2008

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MALCOLM PIRNIE

GREEN SEAL

PHASE I SOIL REMEDIATION REPORT

ANALYTICAL DATABASE

FORMER SYLVANIA ELECTRIC PRODUCTS INCORPORATED FACILITY

HICKSVILLE, NEW YORK

SITE NUMBER V 00089-1

Prepared by

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July 2007

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1.0 INTRODUCTION

The data collection during the Phase I Soil Remediation Program at the Former Sylvania Electric Products Incorporated Facility, Hicksville, New York, (the Site) followed the approved *Comprehensive Soil Remediation Program Work Plan, Former Sylvania Electric Products Facility, Hicksville, New York, (Revision 5: June 2003)* (URS, et. al. 2003) (Work Plan) data quality objectives. Portions of the Work Plan are excerpted here to provide the reader with an understanding of those objectives and to clarify the goals of collecting the data during this remediation program. Because of the size of this database, the submission to the New York State Department of Environmental Conservation (NYSDEC) is in electronic format and not available in hard copy.

2.0 DATA QUALITY OBJECTIVES FROM APPROVED WORK PLAN

Data quality objectives (DQOs) are both quantitative and qualitative statements specifying the quality of the environmental data required to support the decision making process. DQOs define the total acceptable uncertainty in the data for each specific activity conducted during the remedial activities. The uncertainty includes both sampling and analytical error. Zero uncertainty is the goal, however, both field and laboratory variables inherently contribute to uncertainty in the data. The overall objective is to keep the total uncertainty within a range that will not hinder the intended use of the data. The Quality Assurance/Quality Control (QA/QC) requirements were established such that there is a high degree of confidence in the measurements.

The principal DQOs of the remedial activities were to generate data of sufficient quality to support both qualitative and quantitative conclusions concerning the evaluation of the nature and extent of process residuals at the Site and to support conclusions made as a result of the remedial activities. Specific data quality criteria for precision, accuracy, representativeness, completeness, comparability, and sensitivity were specified in this program.

Laboratory analyses and analytical levels adhered to the guidelines described in United States Environmental Protection Agency's (USEPA's) *Data Quality Objectives for Remedial Response Activities* (USEPA 1987). Analytical levels are defined in the guidance document as follows:

- Level I implies field screening or analysis using portable instruments. Results are often not analyte specific and not quantitative but results are indicators which are available on a real-time basis.
- Level II implies field analyses using portable analytical instruments (e.g., mobile Site laboratories). There is a wide range of the quality of data that can be generated for Level II analyses depending on the use of suitable calibration standards, reference materials, sample preparation equipment, and training of the instrument operator. Results are available on a real-time basis or within several hours.
- Level III implies off-Site laboratory analysis. Level III analyses may or may not use USEPA Contract Laboratory Program (CLP) procedures or a CLP laboratory, and may or may not use documentation procedures required of Level IV analyses. Level III analyses can provide

data of the same quality as Level IV, but USEPA Methods such as *Test Methods for Evaluating Solid Waste* (SW-846) (USEPA 1998) are used instead of CLP methods.

- Level IV implies CLP routine analytical services (RAS). All analyses are performed in an off-Site CLP analytical laboratory following CLP protocols. Level IV is characterized by rigorous QA/QC protocols and documentation.
- Level V implies analyses by non-standard methods including CLP special analytical services (SAS). All analyses are performed in an off-Site analytical laboratory. Method development or method modification may be required for specific constituents or detection limits.

The USEPA states that the purpose of a QA/QC program is to define "procedures for the evaluation and documentation of sampling and analytical methodologies and the reduction and reporting of data. The objective is to provide a uniform basis for sample collection and handling, instrument and methods maintenance, performance evaluation, and analytical data gathering and reporting" (USEPA 1987). NYSDEC's guidance document for Quality Assurance Project Plans (QAPPs), states that "quality assurance is a management system for ensuring that all information, data, and decisions resulting from the remedial activities are technically sound, and properly documented" (NYSDEC 1991). QC is the functional mechanism through which QA achieves its goals.

Table 1 below shows the relationship of the environmental sampling to the objectives, types of analyses, data uses, and the analytical levels that were a part of the remediation program.

Table 1. Sampling, Objectives, Analyses, Data Uses, and Analytical Levels

Sampling	Objectives	Types of Analyses*	Data Uses	Analytical Levels
Soil Sampling	Quantify process residuals used at the Site, if any were present	VOCs Nickel Radionuclides	Worker health and safety and proper disposition of soils	I, II and III
Air Sampling	Quantify PCE and TCE levels in the ambient air, if any; radionuclides in dust particles, if any were present	VOCs Radionuclides	Worker and community health and safety and compliance with the Community Air Monitoring Program	I, II, and III
Surface Water Sampling	Quantify process residuals in impounded surface water, if any encountered	VOCs Nickel Radionuclides	Proper disposition of surface water	II and III

Notes:
VOCs: volatile organic compounds
PCE: tetrachloroethene; TCE: trichloroethene
Radionuclides may include alpha spectroscopy and gamma spectroscopy on a sample specific basis.
*If oily or significantly stained soils are noted based on field observations, additional analyses were performed at the discretion of field personnel.

3.0 HOW TO READ BARCODES IN THIS DATABASE

The way samples were named in the field and in the database was by a sequential database location code and by descriptive abbreviations embedded in a barcode. The barcode abbreviations, referred to as sample designators, are outlined in Table 2 below and discussed in detail in Section 7.4 of the *Phase I Soil Remediation Report, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York*, December 2006. Figure 1 illustrates the Site Grid System upon which the primary and secondary locations are listed in the barcodes. Several sample classifications were developed to chronicle and identify samples. Samples were first identified by **genre** to distinguish a sample, waste bag, or trip blank. The sample **category** identifies the analysis to be performed (i.e., radiological, chemical, or nickel (Ni). Next, the sample type and media type **(matrix)** were identified. Each sample **type** has its own sampling protocol, QA/QC, and volume requirement. Permanent labels were generated by the barcode system and were affixed to each sample container.

Table 2. Explanation of Sample Designators

Genre	Sample	Waste	TB					
	Sample	Waste bag	Trip Blank					
Category	R	C	N	Z	M	S	T	D
	Radiological	Chemical	Ni	C and N	Misc.	SVOC	TCLP VOC	Max. Density
Type	CH	CF	VF	CV	WS	BG	BF	BS
	Characterization	Confirmation	Verification	Conf./Verif.	Waste	Backfill (off Site)	Backfill (on Site)	Backfill (on Site, removed and staged)
	HS	EX	SP	DL	KD	DR		
	Health & Safety	Extra	Sample Point	Delineation	Kd Drilling	Drainage		
Matrix	S	W	A	F	D	P	G	
	Soil	Water	Anomaly	Filters	Debris	Pipe	Sludge	
	U	M						
	UST	Drum						
Add'l Sample Info	S1	S2	S3	DP	AG	BB		
	On-Site Analysis	Off-Site Analysis	Archive	Duplicate	Aggregate	URS Blue Bell		
	EC	NY State Department of Environmental Conservation						
	DH	NY State Department of Health						
	MS	Matrix Spike						
	SD	Matrix Spike Duplicate						

3.1 Sample Barcodes Decoded

For illustrative purposes, this section presents sample barcodes and tables that decipher them.

00093-C-WS-S-01U070061-08.0-S2
This designation identifies this sample as the ninety-third consecutive sample collected for the project.

Category	Type	Matrix	Primary Location	Secondary Location	Lift Liner™	Add'l Sample Info	Add'l Sample Info
Chemical	Waste	Soil	Cell	subcell	number	Sample depth (ft)	Off-Site Analysis
C	**WS**	**S**	**1**	**U07**	**0061**	**8.0**	**S2**

01176-R-WS-S-02U100844-12.0-S2-DP
This designation identifies this sample as the one-thousandth one hundred seventy-sixth consecutive sample collected for the project.

Category	Type	Matrix	Primary Location	Secondary Location	LiftLiner™	Add'l Sample Info	Add'l Sample Info	Add'l Sample Info
Radiological	Waste	Soil	Cell	subcell	number	Sample depth (ft)	Off-Site Analysis	Duplicate Sample
R	**WS**	**S**	**2**	**U10**	**0844**	**12.0**	**S2**	**DP**

17777-N-DL-S-09H20DL03-29.0-S1
This designation identifies this sample as the seventeen-thousandth seven hundred seventy-seventh consecutive sample collected for the project.

Category	Type	Matrix	Primary Location	Secondary Location	Boring	Add'l Sample Info	Add'l Sample Info
Nickel	Delineation	Soil	Cell	subcell	number	Sample Depth (ft)	On-Site Analysis
N	**DL**	**S**	**9**	**H20**	**DL03**	**29.0**	**S1**

01984-R-BG-S-111PIT-01.0-S2
This designation identifies this sample as the one-thousandth nine hundred eighty-fourth consecutive sample collected for the project.

Category	Type	Matrix	Primary Location	Secondary Location	Add'l Sample Info	Add'l Sample Info
Radiological	Backfill (off Site)	Soil	Backfill source	none	Sample depth (ft)	Off-Site Analysis
R	**BG**	**S**	**111 Pit**		**1.0**	**S2**

01237-Z-VF-S-13H24B-06.0-S2

This designation identifies this sample as the one-thousandth two hundred thirty-seventh consecutive sample collected for the project.

Category	Type	Matrix	Primary Location	Secondary Location	VF sample	Add'l Sample Info	Add'l Sample Info
Chemical and Nickel	Verification	Soil	Cell	subcell	number	Sample Depth (ft)	Off-Site Analysis
Z	**VF**	**S**	**13**	**H24**	**B**	**6.0**	**S2**

17249-FB-08/25/04

This designation identifies this sample as the seventeen-thousandth two hundred forty-ninth consecutive sample collected for the project.

Category	Type	Matrix	Primary Location	Secondary Location	Add'l Sample Info	Add'l Sample Info
Chemical	QC	Water	off-Site upgradient groundwater source	accompanied groundwater sample used in KD testing	Field Blank	Date collected
					FB	**08/25/04**

00546-TB-06/03/2003

This designation identifies this sample as the five hundred forty-sixth consecutive sample collected for the project.

Category	Type	Matrix	Primary Location	Add'l Sample Info	Add'l Sample Info
Chemical	QC	Water	accompanied soil samples sent to off-Site lab	Trip Blank	Date collected
				TB	**06/03/03**

3.2 Additional Barcode Abbreviations

Backfill Sources (a number of backfill sources were tested; those passing NYSDEC review were used). The barcodes for backfill sources were derived as abbreviations from the locality names, either geographic names or the names of the firms that supplied the backfill materials.

1JDP	J.D. Posilico Bros., Yard, Stockpile 1, New Highway, Farmingdale, NY
3JDP	J.D. Posilico Bros., Yard, Stockpile 3, New Highway, Farmingdale, NY
111PIT	111 Pit North, Central Avenue, Hauppauge, NY
111SOUTH	111 Pit South, Central Avenue, Hauppauge, NY
COMMACK	Commack Stockpile, South Avenue, North Bay Shore, NY
RTE109	Route 109, corner of Del Drive and Route 109, Farmingdale, NY
GRUMAN	S. Oyster Bay Road and Grumman Road, Bethpage, NY
PENBLVD	Peninsula Boulevard, Rockville Centre, NY
ROUNDSW	Round Swamp and Winding Road, Bethpage, NY
PULASKI	Pulaski Road, Northport, NY
SPAGNOLI	Spagnoli Road and Route 110, Melville, NY
EISLANDDV	East Island Development, Round Swamp Road, Melville, NY
ECMQ	East Coast Mines and Materials, south of Sunrise Highway, Quogue, NY
SSRDS	South Service Road, west of exit 48, Highway 495, Plainview, NY
SPAG2	Spagnoli Road Stockpile 2, Melville, NY
W13TH	West 13th Street, Dix Hills, NY
WMAIN	West Main Avenue, Dix Hills, NY

Miscellaneous Abbreviations

B100 and 100 Building	Samples from the 100 Building, 100 Cantiague Rock Road, Hicksville, NY
CARBON TEST	Test samples of carbon prior to proper disposal from the carbon granules used to polish the air handling systems exhausts prior to release to the atmosphere
DECON WATER (BAKER TANK)	Decontamination water generated from cleaning various equipment tested prior to proper disposal off Site
DRUM LIQUID	Liquid decontamination water stored in a drum prior to proper disposal off-Site
WATER/METHANOL	Water and methanol mixture generated from the on-Site chemical analytical service tested prior to proper disposal
WW-LAB112003	General waste water generated from the on-Site chemical analytical service tested in November 2003

4.0 DATA QUALIFIERS

4.1 Laboratory Data Qualifiers

The following qualifiers were used by the on-Site analytical services (Stone Environmental and gamma spectroscopy service) and/or the off-Site laboratories (Severn Trent Laboratories, Inc.)

Flags	Interpretation
U or <	Non-detect result at the established laboratory reporting limit.
J	In organic analysis, this flag indicates an estimated value or a value below the established reporting limit but above the method detection limit.
N	Indicates a result associated with an MS/MSD percent recovery that exceeds laboratory control limits.
#	In on-Site gamma spectroscopy result, this flag identifies that all peaks for activity had bad shape.

4.2 Validation Data Qualifiers

The following data validation qualifiers were entered into the database by URS during the data review process to simplify the presentation of data in the final report per the USEPA Region II Guidance.

Flags	Interpretation
U	The datum should be considered a non-detect at the value reported.
UJ	The datum should be considered a non-detect; however, the detection limit may be inaccurate.
R	The datum is unusable due to serious quality control (QC) failures.
J	The datum should be considered an estimated value, more highly biased or variable than normal.
NJ	The analysis indicates the presence of a compound that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
S	Screening Data. Data quality cannot be fully assessed due to lack of QC information. (See data validation report for detail discussion.)
k	In on-Site gamma spectroscopy result, this flag indicates duplicate imprecision.
Q1	In on-Site gamma spectroscopy result, sample result was calculated based on bad peak shape.
Q2	In on-Site gamma spectroscopy result, total uncertainty greater than 100%.

A detailed review of general data quality, usability, and assessment of attainment of the data quality objectives is presented in Appendix D, Data Validation and Data Management in the *Phase I Soil Remediation Report, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York (December 2006),* URS Corporation and Envirocon, Inc.

5.0 SIGNIFICANT DIGITS FOR ON-SITE ANALYSES

In prior reports for this project (Section 7.0 References), the analytical results were reported exactly as reported by the on-Site gamma spectroscopy service and the on-Site analytical service (VOCs and Ni). This convention was followed to expedite the reporting process during field operations which impacted decisions such as whether to stop or continue excavating.

The on-Site database results presented in this CD have been quality checked and rounded for reliability to two significant digits using a biased rounding method. Examples of significant digits reporting are given in Table 3.

Table 3. Examples of Significant Digit Reporting

Results from on-Site Analytical Services	Results Rounded to Two Significant Digits
U-238 20.05 pCi/g	U-238 20. pCi/g
Th-232 1.05 pCi/g	Th-232 1.1 pCi/g
PCE 10.233 mg/kg	PCE 10. mg/kg
Ni 738 mg/kg	Ni 740 mg/kg

6.0 ON-SITE GAMMA SPECTROSCOPY

The on-Site gamma spectroscopy service was originally intended to provide analysis for a wide range of radionuclides. This wide range of analysis was performed on samples with location identification numbers 00001 through 00004. On-Site analysis of subsequent samples, however, was tailored to the radionuclides of concern at the Site. The list of radionuclides analyzed by on-Site analysis was subsequently expanded in September 2004 to account for changes in U.S. Department of Transportation shipping requirements.

Most of the on-Site gamma spectroscopy results for Ra-226, a naturally occurring radionuclide, were rejected and are reported with an "R" qualifier. Validation of the results indicated that most of the on-Site Ra-226 results were rejected due to spectroscopy that displayed poor shape (failed a peak shape test) as explained in Appendix D, Data Validation and Data Management in the *Phase I Soil Remediation Report, Former Sylvania Electric Products Incorporated Facility, Hicksville, New York (December 2006),* URS Corporation and Envirocon, Inc.

Although U-238 can emit gamma radiation during radioactive decay, the on-Site gamma spectroscopy detectors were not able to reliably detect this gamma energy. Since the decay daughter of U-238 decay is Th-234, which is more readily detectable with gamma spectroscopy, the assumption was made that all Th-234 detected was from U-238 decay. The "correction factors" used to convert the reported Th-234 activity values to U-238 values were correlation factors relating the on-Site gamma spectroscopy Th-234 values to the STL off-Site alpha spectroscopy U-238 values.

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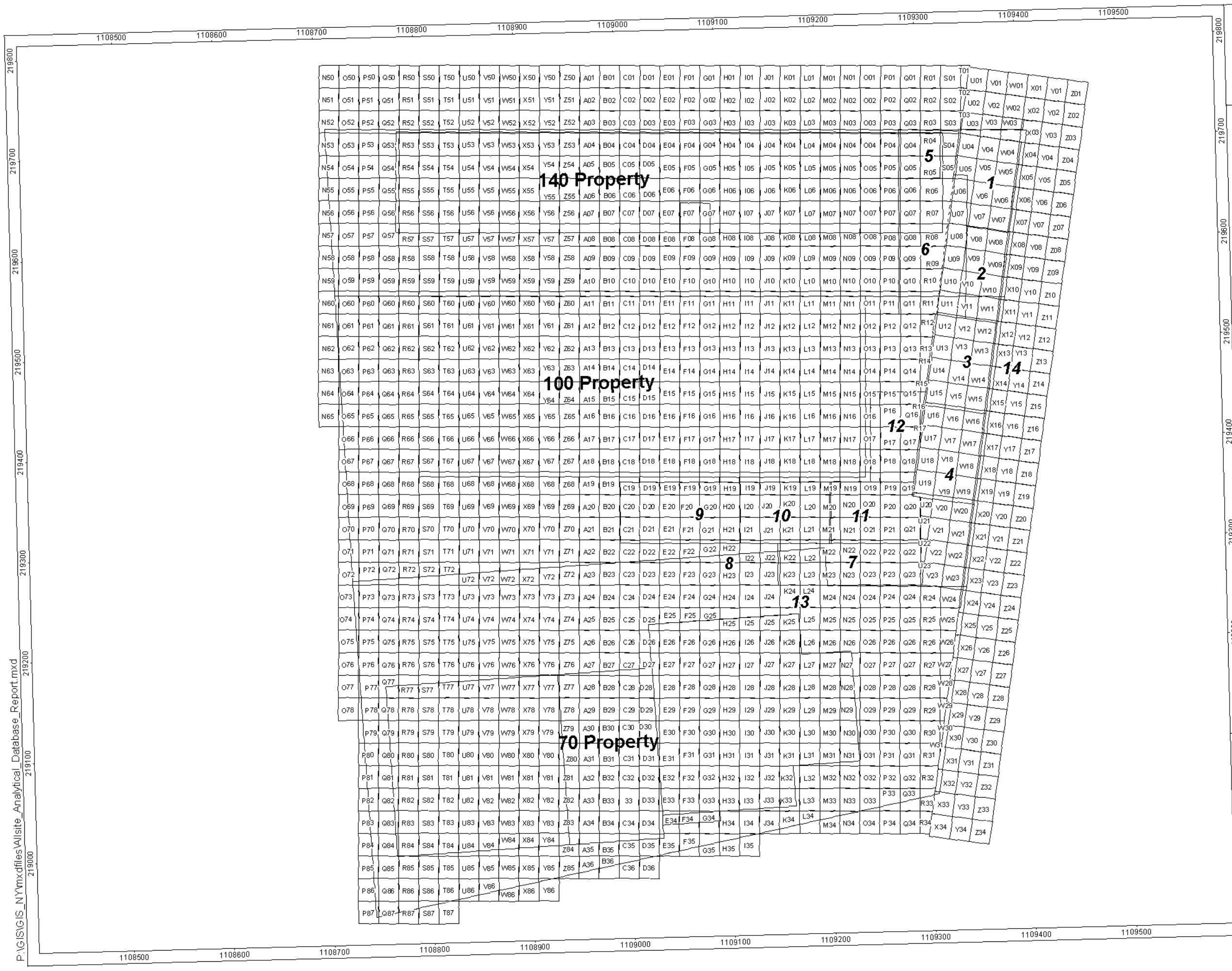

Figure 1
Site Grid System

Legend

- Sheet Pile to Remain in Place
- Sheet Pile
- Sheet Pile Before Reconfiguration
- Building
- Property Line
- Subcell Boundary
- Cell Boundary

N

Feet

0 100 200

Projection Information
State Plane Projection
Long Island Zone
North American Datum 1983
Feet

NYSDEC V00089-1 URS27010-039

GTE OPERATIONS SUPPORT INCORPORATED
HICKSVILLE, NEW YORK

DESTINY
RESOURCES, INC.

DRI_ID: 1006.H6791

July 3, 2007

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